CURRICULUM VITAE

ARMANDO J.L. POMBEIRO

CONTENTS

CURRICULUM VITAE (Abridged)

Name - **Armando José Latourrette de Oliveira Pombeiro** (*Armando J.L. Pombeiro*)
Official address – Centro de Química Estrutural (CQE), Instituto SuperiorTécnico (IST), Universidade de Lisboa (ULisboa), Av. Rovisco Pais, 1049-001 Lisboa. Portugal. *E-mail*: pombeiro@tecnico.ulisboa.pt.
Homepage: https://fenix.tecnico.ulisboa.pt/homepage/ist10897
ORCID: http://orcid.org/0000-0001-8323-888X . *Researcher ID*: I-5945-2012. *Scopus Author ID*: 7006067269. *Ciência ID*: 8311-38FA-CEFB
Date and Place of Birth - June 9th, 1949, Porto. *Nationality* - Portuguese.
Education: Chemical Engineering (1972, IST); D. Phil. (1976, Univ. Sussex).
Present positions: Full Professor "Jubilado" (IST), *Distant Director* (Head of Research Centre) at the RUDN University (Moscow), *Honorary Professor* at St. Petersburg State Univ. (Institute of Chemistry), *Invited Chair Professor* at National Taiwan Univ. of S&T;
President of the Scientific Council of the Academy of Sciences of Lisbon; Coordinator of the "Coordination Chemistry and Catalysis" research Group (CQE).
Honorary and official appointments, membership of professional bodies, commissions, etc.:
Full Member of the *Academy of Sciences of Lisbon* (since 1988), President of the Scientific Council of the Academy (2022-),Vice-President of the Class of Sciences of the Academy (2006-12, and 1999-2000), Secretary-General of the Academy (2001-05) and Secretary of its Class of Sciences (2001-05), Vice-Secretary-General of the Academy and Secretary of its Class of Sciences (1998), Vice-Secretary of this Class (1993-98), Member of the Commission for Publications of this Academy; a Coordinator of the International Affairs of the Academy; a Representative of the Academy at the International Council for Science (ICSU) and at the European Science Foundation; Member of the European Academies' Science Advisory Council (EASAC);
Fellow of the *European Academy of Sciences* (EurASc) (2018); Member of the *Academia Europaea* (2022);
President of the *restructured CQE* (*ca.* 390 members) and Coordinator of its Thematic Line "Synthesis and Catalysis" (2015-19), member of the CQE directive body (since 2001) and founder of the research Group "Coordination Chemistry and Catalysis" and of its precedents;
Founding President of the *College of Chemistry of the University of Lisbon* (2017-19) and Coordinator of the Commissions for its creation and installation (2015-17);
Member of the Higher Council for Science, Technology and Innovation (2004) and of the Higher Council for Science and Technology (1995) (Portugal); Member of the External Evaluation Commission of the Physical Sciences of the Portuguese Universities (2002); Member of External Review Panels for assessment and accreditation of Chemistry Program (Baku State University, 2021) and of Eng. Chem. Processes Department (Padova University, 2005); Member of the Physical and Engineering Science and Technology Panel (1999) and of the Advisory Panel on the ASI Programme (1995-98), of the NATO Science Programme;
Distant Director at RUDN University (since 2021);
Honorary Professor at Saint Petersburg State University (since 2019) and *Invited Chair Professor* at the National Taiwan University of Science and Technology (since 2007);
Co-founder of the Portuguese Electrochemical Society, President (2009-14, 1994-95,1988-89), Vice-President (1990-91, 2018-) and Secretary (1983-87) of this Society; Co-founder of the Iberoamerican Society of Electrochemistry (SIBAE) and first National Representative (1992-96) at this Society; Member of the International Society of Electrochemistry; Affiliate Member of IUPAC; Honorary Member of the Portuguese Chemical Society; former Fellow of the Royal Society of Chemistry and member of the American Chemical Society;
Chairman of the XXII Int. Symposium on Homogeneous Catalysis (2022), of the 1st Int. Conf. Non-covalent Interactions (2019), of the 7th EuCheMS Conference on Nitrogen-Ligands (2018), of the XXV Int. Conf. Organometallic Chemistry (XXV ICOMC, 2012); Director of a NATO ARW and Chairman of 3 international symposia on Electrochemistry; Member of the Organizing and/or Scientific Committees of a number (over 30) of international congresses on Electrochemistry (of the Iberoamerican Electrochemical Society, of the Journées d'Électrochimie, of the Portuguese

Electrochemical Society, Chianti Meetings), on Coordination (ICCC), Organometallic (ICOMC) and Inorganic Chemistries, on Catalysis and on Solution Chemistry (IUPAC);
Member of the Organizing and/or Scientific Committees of international Schools on Coordination Chemistry (4) and on Organometallic Chemistry (ISOC) (10); Member of the Organizing Committees of various international or national symposia at the Academy of Sciences of Lisbon (on History and Development of Science, on interdisciplinary scientific and social themes);
Director of the FCT PhD Program on "Catalysis and Sustainability" (CATSUS, since its creation, 2014); Coordinator of the scientific area of "Synthesis, Molecular Structure and Chemical Analysis" (IST, 2009-14); Member of the Scientific Commissions of the PhD and Master courses (IST, 2009-19); Responsible professor for the Dual Master Program in Chemistry (IST-Univ. Camerino, since 2009).
Member of the Board *(Mesa)* of the General Assembly of the IST Association for Research & Development (IST-ID, since 2021), of the Scientific Council of IST (2017-19) and of the Council of the Coordinators of the Research Units (2015-19).
Coordinator of the Chemistry PhD Programme (IST, 2000-03); representative of the Inorganic Chemistry Department at the Coordination Commission of the School of Chemical Engineering (IST, 1981-84) and Coordinator of this Department (IST, 1983-84).
Prizes: SCF French-Portuguese Award (French Chemical Society, 2018, 1st time); Vanadis award (2018); Portuguese Electrochemical Society Award (2015); Madinabeitia-Lourenço (International Hispano-Portuguese) Prize (Royal Spanish Chem.Soc., 2013); Ferreira da Silva Prize (Port.Chem.Soc., 2012); Stimulus for Excellence (FCT, 2005); Scientific Prize Techn. Univ. Lisbon - Santander Totta (1st edition; the highest ranked researcher within chemical, biological and materials sciences, based on productivity and impact factor criteria), 2007; Scentific Prize Univ. Lisbon - Caixa Geral de Depósitos (2018).
***Journal Special Issues in his honor*:** "*Coordination Compounds and Catalysis" (*in *Coord. Chem. Rev.* 2020*, vol. 405); "Synthesis and Applications of Organometallic Compounds" (*in *J. Organometal. Chem,* 2019*).*
Teaching: Courses on "Catalysis" [CATSUS, IST; DEA and MSc Multinational, *École Polytechnique*, Paris; MSc Chem./Chem. Eng., IST; Erasmus IP courses, *Univ. Camerino*, Italy; *Jyvaskyla Univ.* Summer School, Finland], "Organometallic Chemistry" (Chem. and MSc, IST), "Advanced Strategies of Synthesis" (PhD, IST), "Specialization Laboratories" (MSc, IST), "Inorganic Chemistry" (Chem., IST), "Electrochemical Methods in Synthesis" (MSc, IST), "Laboratory Techniques" (Chem., Chem. or Biolog. Eng., IST), "Analytical Chemistry" (Chem., IST), "Carbyne, Carbene and Isocyanide Complexes" (MSc, Univ. Sussex) and "Coordination Compounds in Pharmacology" (research course, IST).
Main research interests
• *Activation of small molecules* with biological, pharmacological, environmental orindustrial interest or related ones [*e.g.*, *alkanes (functionalization under mild conditions)*, alkynes, phosphaalkynes, isocyanides, carbon dioxide, carbon monoxide, dinitrogen, nitriles, cyanamides, nitric oxide, oximes, oxadiazolines, carboxamides, amidines, olefins, azides or cyanates] by metal centres, and their application in *metal-mediated synthesis and catalysis*, namely by searching for mimetic systems of biological processes (*e.g.* catalysed by peroxidases, particulate methane monooxygenase, nitrile hydratases and nitrogenases), alternatives for industrial processes and new types of molecular activation with significance in fine chemistry (including compounds with bioactivity). Also comprehending: *non-covalent interactions* in synthesis; *crystal engineering of coordination compounds; self-assembly* of polynuclear and supramolecular structures; transition metal and organometallic chemistries and catalysis in *aqueous media*; *metal-ligand cooperation*; high *pressure gas reactions; catalysis in non-conventional media, such as supercritical fluids and ionic liquids*; *bioactive complexes;* selective *chemosensors* of biological ions.
• *Molecular Electrochemistry* of coordinationand organic compounds: applications in electrosynthesis, electrocatalysis, mechanistic studies, establishment of potential-structure relationships and induction of chemical reactivity by electron-transfer.
• *Theoretical calculations* for interpretation of properties and reactivity at the molecular level.
Selected projects (under his responsibility): •"Catalytic Alkane Functionalization towards Sustainable Organic Synthesis" (PTDC program, FCT). •"Catalysis and Sustainability" (FCT PhD Program). •

"Chemical Synthesis and Catalysis" (Nat. Program for Re-Equipping Science). •"Catalytic Carboxylation of Alkanes" (POCI program, FCT). •"Metal-based Synthons with Pharmacological Significance" (POCTI program, FCT). •"Coordination Chemistry and Molecular Electrochemistry, Synthesis and Catalysis" (FCT). •"Transition Metal Chemistry and Catalysis in Aqueous Media" (HRM EC Network) (Portug. team leader).
(*FCT – Foundation for S&T. HRM – Human Resources and Mobility Marie Curie Research Training. POCI – Science and Innovation Operat.Program. POCTI - Science, Technology and Innovation Operat. Program*)

Publications

1 book (author); 9 books (editor);
ca. 1,000 research publications (including *ca*. 160 chapters in books or reviews and *ca*. 840 other research publications in refereed international journals); *ca*. 40 patents;
ca. 20 didactic works; *ca*. 60 publications on various topics (S&T systems, Academy of Sciences of Lisbon, national electrochemical research, biographies, interviews, prefaces, editorials, etc.).

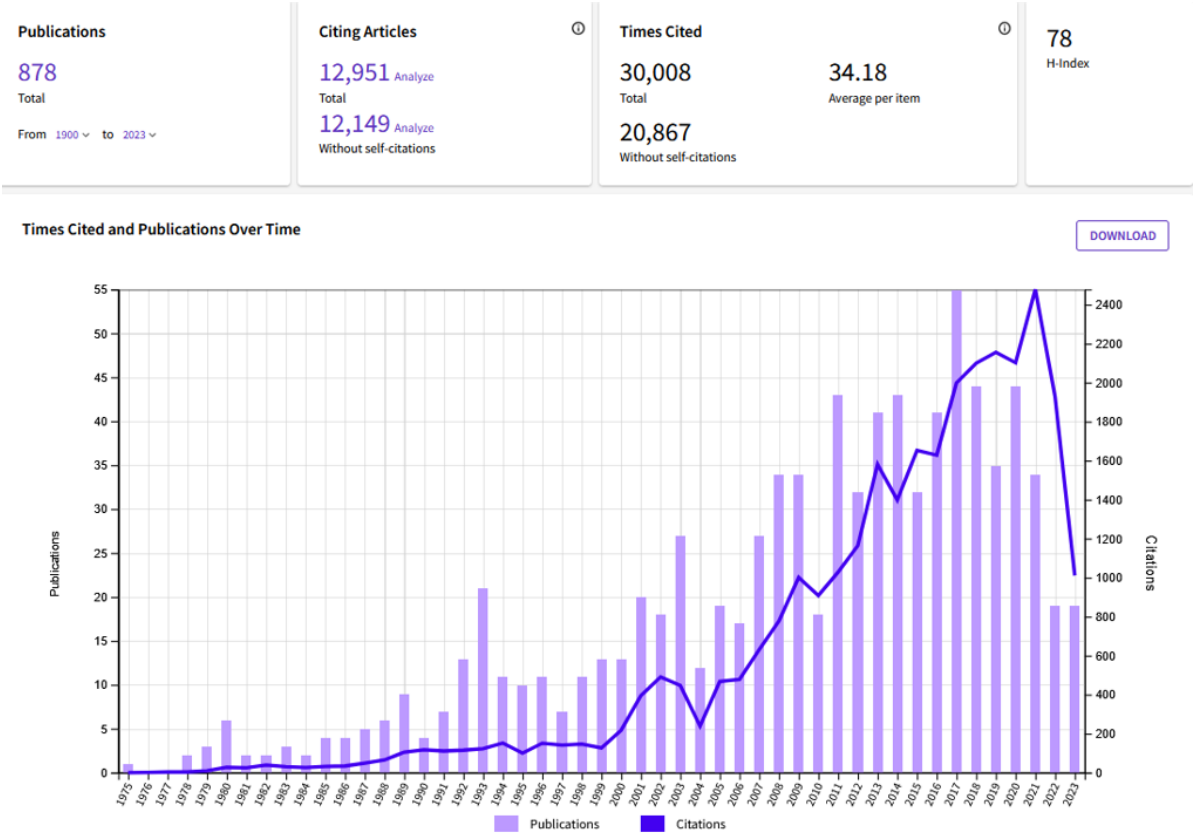
Other contributions

ca. 120 invited lectures (plenary, keynote and session lectures) at international conferences;
ca. 75 invited lectures at scientific institutions (usually foreign ones);
ca. 845 communications at conferences.

Research training supervision and mentoring

28 PhD and 19 MSc theses (degrees awarded), *ca*. 60 Doctorates (mostly foreign Post-doc. Fellows), *ca*. 75 Graduates or Undergraduates (mostly graduate foreign PhD, Marie Curie, Erasmus, FCT, etc. grant holders).

Citation Report (Web of Science, August 25th, 2023)



CURRICULUM VITAE

PERSONAL DATA

Name: Armando J.L. Pombeiro
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Homepage:https://fenix.tecnico.ulisboa.pt/homepage/ist10897
ORCID: http://orcid.org/0000-0001-8323-888X
Researcher ID: I-5945-2012. *Scopus Author ID*: 7006067269. *Ciência ID*: 8311-38FA-CEFB
Date and place of birth: Porto, June 9th, 1949. *Nationality*: Portuguese.
Qualifications

- Chemical Engineering degree [1972, Instituto Superior Técnico (IST), Portugal] (grade of 17 within the 0-20 scale).
- D. Phil. (1976, The University of Sussex, England; supervisors: Prof. Joseph Chatt and Dr. Raymond L. Richards).
- Habilitation ("Agregação"), IST, 1983.

Present Positions

- *Full Professor "Jubilado"* (IST), since 2019;
- *Distant Director* (Head of Research Centre "Crystal chemistry and structural analysis") at the Research Institute of Chemistry (RIC) of the Peoples' Friendship University of Russia (RUDN University, Moscow), since 2021;
- *Honorary Professor* at Saint Petersburg State University (Institute of Chemistry), since 2019;
- *Invited Chair Professor* at National Taiwan University of Science & Technology, since 2007;
- *Coordinator* of the "Coordination Chemistry and Catalysis" research Group (CQE, IST);
- *President* of the Scientific Council of the Academy of Sciences of Lisbon.

Career: Appointed as Assistant (1971), Auxiliary Professor (1976), Associate Professor (1979) and Full Professor (1989) at the IST.
Secondary Level: Alexandre Herculano High School, Porto, 1966 (grade of 17 within the 0-20 scale).

HONOURS, APOINTMENTS, MEMBERSHIP, COMMISSIONS, ETC.

SCIENTIFIC AND CULTURAL SOCIETIES (Membership)

- Academy of Sciences of Lisbon (Full Member since 1988; Corresponding Member, 1981-1988).
- European Academy of Sciences (EurASc) (Fellow, since 2018).
- Academia Europaea (Member, since 2022).
- Royal Society of Chemistry (Fellow – F.R.S.C., C. Chem., 1986-2012*; Member – 1980-1986) (founded in 1980 upon unification of the Royal Institute of Chemistry with the Chemical Society, both indicated below).
- Royal Institute of Chemistry (Member – M.R.I.C., C. Chem. 1976 -1980).
- Chemical Society (Fellow – 1976 -1980*).
- New York Academy of Sciences (1995-2004*).
- European Society of Chemistry (since 1999) (currently EuCheMS, European Chemical Societies).

- IUPAC (Affiate Member, since 1987).
- American Chemical Society (2006-2012*).
- Portuguese Electrochemical Society (founder and member, since 1983).
- International Society of Electrochemistry (since 1981).
- Iberoamerican Electrochemical Society (SIBAE; co-founder and member since 1990; national representative member, 1992-96).
- Portuguese Chemical Society (since 1972; Honorary Member since 2017).
- "Grémio Literário" (Literary Society, since 1981).
- Lisbon Academy of Sciences' Friends Association (co-founder member, 2002-06)
- "Sociedade de Geografia de Lisboa" (Geographical Society, since 2003).
- Association "Casa de Cultura" (House of Culture) Prof. Dr. José Pinto Peixoto (co-founder member, since 1999; Honorary Member since 2009; member of the Advisory Board).

(Withdrawn upon his request for financial reasons).*

AT THE ACADEMY OF SCIENCES OF LISBON AND RELATED ORGANIZATIONS

Positions and representations

- Full Member ("Membro Efectivo") of the Academy of Sciences of Lisbon (elected in January1988); Corresponding Member ("Membro Correspondente") (1980-1988).
- Doyen (*Decano*) of the Chemistry Section (since the creation of this title at the Academy, 2022) and one of the two Doyens (as Full Member) of the Academy.
- President of the Scientific Council of the Academy of Sciences of Lisbon (since the creation of this Council, 2022).
- Member of the Scientific Council of the Academy of Sciences of Lisbon, as representative of the Chemistry Section (since the creation of this Council, 2022).
- Successor of the Chair of the Academician Herculano de Carvalho (former Chair 1, Section of Physico-Chemical Sciences; current Chair 12, Section of Chemistry) (2015).
- Vice-President of the Class of Sciences of the Academy of Sciences of Lisbon (2006-12, and 1999-2000).
- Secretary-General of the Academy of Sciences of Lisbon and Secretary of its Class of Sciences (2001-05).
- Vice-Secretary-General of the Academy of Sciences of Lisbon and Secretary of its Class of Sciences (1998).
- Vice-Secretary of the Class of Sciences of the Academy of Sciences of Lisbon(1993-98).
- Member of the Administrative Council of the Academy of Sciences of Lisbon (1998, 2001-06).
- Member of the Higher Council for Science, Technology and Innovation (Ministry of Science and Higher Education) (as representative of the Academy of Sciences of Lisbon, 2004).
- Member of the Higher Council for Science and Technology (Ministry of Planning and Territorial Administration, Secretary of State for Science and Technology) (as representative for the Academy of Sciences of Lisbon, 1995).
- A Coordinator of the International Affairs of the Academy of Sciences of Lisbon (2006-2011).
- Representative of the Academy of Sciences of Lisbon at ICSU (International Council for Science) (2006-14).
- Representative of the Academy of Sciences of Lisbon at the European Science Foundation (ESF) (2007-14).
- Member of the European Academies' Science Advisory Council (EASAC) (2001-14).

- Member of the Commission for Publications of the Academy of Sciences of Lisbon (1981-2007).
- Member of the Commission for the Vocabulary of Technical and Scientific Portuguese Words (Academy of Sciences of Lisbon) (1984).
- Member of the reviewers board (chemical terms) for the Dictionary of the Portuguese Language, Academy of Sciences of Lisbon, 2001.
- Member of the Advisory Council of the Institute of the Lexicology and Lexicography of the Portuguese Language of the Academy of Sciences of Lisbon (2008).
- Member and co-founder of the Lisbon Academy of Sciences' Friends Association (2002).
- Representative of the Academy of Sciences of Lisbon at various meetings of international organizations, namely:
    - First European Academies Science Advisory Council (EASAC) Meeting, Belgium Academy of Sciences, Brussels, September 6th, 2001;
    - Fourth Meeting of the European National Members of the International Council for Science (ICSU), ICSU Headquarter, Paris, October 20th, 2006;
    - 2007 Round Table Meeting of the Standing Committe for Physical & Engineering Sciences (PESC) with European Science Foundation (ESF) Member Organisations in Chemistry, London, June 14th -15th, 2007;
    - Science Policy Conference, ESF, Maison de la Region Alsace, Strasbourg, November 28-29th, 2007;
    - Meeting of the EASAC Council, Institut de France, Paris, December 19th - 20th, 2007.
    - ESF-ALLEA ("All European Academies") High Level Workshop on the Collaboration between ESF and the Academies, ESF, Brussels, March 7th, 2008 (presentation of a lecture on "The Academy of Sciences of Lisbon within an ESF-ALLEA Context", in co-authorship with Academician E. Arantes e Oliveira).
    - ALLEA Extraordinary Strategy Meeting (Strategic Plan 2010-2015), Royal Netherlands Academy of Arts and Sciences, Amsterdam, November 16-17th, 2009.
    - Debate on the Long-Term Future of the European Research Area (ERA), ESF, Strasbourg, November 19th, 2009.
    - General Assembly, ESF, Strasbourg, November 20th, 2009.
    - ESF Joint Round Table with Core Groups and Member Organisations on Grand Challenges and Interdisciplinarity: Opportunities for Member Organisations and ESF in the Developing European Research Area, Istanbul, Turkey, June 17-18th, 2010.
    - EASAC Council Meeting, Danish Royal Academy of Sciences and Arts, Copenhagen, June 16-17th, 2011.
    - ICSU 30th General Assembly, FAO (United Nations "Food and Agriculture Organization"), Rome, September 27-30th, 2011.
    - "Science and Society Day", ICSU European National Members Group, National Academy of Lincei (Academia Nazionale dei Lincei), Rome, Setember 26th, 2011.
    - EASAC 10th Anniversary Celebratory Meeting, Palace of the Academies, Brussels, November 7th, 2011.

- Representative of the Academy in the Juries of the Gulbenkian Science Prize 1994 (Basic Sciences) and 1995 (Applied and Technological Sciences).
- Member of the Jury of the "Prix Tremplin Mariano Gago" for research (Academy of Sciences of Lisbon and French Academy of Sciences) (inaugural edition, 2022).

- Member of the Jury of the Aboim Sande Lemos Prize (Biochemistry applied to nutrition) of the Academy (1983).
- Coordinator of the nomination by the Academy of the Academician João J. R. Fraústo da Silva for the "Prince of Asturias Prize" (1997 and 2008).
- "Rapporteur" of the Chemistry Section of the Class of Sciences for its members elections (since 1988).
- Secretary of the Academy sessions within his abovementioned secretarial positions (2001-2005, 1993-1998), including writing up the corresponding minutes.
- A representative of the Academy at some meetings/connections with other learned international and national societies (*e.g.*, on publication exchange programmes, conferences and other initiatives), the tutelary Ministry (*e.g.*, on administrative and technical staff positions, and on the science and technology system), the Directorate-General of National Monuments (*e.g.*, on building maintenance and restoration), the Ministry of Justice (on legal issues), the typography publishers of the Academy (on publication issues), and at scientific, cultural (*e.g.*, exhibitions), homage and prize awarding events, etc.
- In charge of establishing a committee for reevaluation of an admission in view of updated information (2022).

Organization of symposia at the Academy

- Coorganizer of the symposium on "New Trends in the Chemistry of Nitrogen Fixation", Academy of Sciences of Lisbon, 1979, within the bicentennial celebrations of the Academy (coordinated by its President, Academician Luís M. Câmara Pina).
- Representative of the Academy President in the relations with the Russian Embassy and the Russian Cultural Attaché in Lisbon for the authorization of attendance of the invited Russian contributors to that symposium, Prof. M. E. Vol'pin and Prof. A. E. Shilov (1979).
- Member of the organizing committees of a number of symposia of the Academy of Sciences of Lisbon, namely within its bicentennial celebrations, such as: "Theory of Climate" (October 1981), "History and Development of Science in Portugal (until the XXth Century)" (April 1985), "Problematics of Drug in Portugal" (December 1985), "Problematics of Tabagism in Portugal" (March 1987), "Problematics of Alcoholism in Portugal" (March 1988), "Thermodynamics and Reactivity of Molecular Systems" (November 1991), "Bioetics and the Future" (May 1994).
- Chairman of the "III National Meeting on Electrochemistry", Academy of Sciences of Lisbon, June 1982, within the Academy bicentennial celebrations (led to the foundation of the Portuguese Electrochemical Society and of the journal *Portugaliae Electrochimica Acta*).
- Vice-Secretary-General of the Symposium on the "History and Development of Science in Portugal in the XXth Century", Academy of Sciences of Lisbon, November 1989 (within the Academy bicentennial celebrations).
- Coordinator of the Symposiun on "Cold Nuclear Fusion – Reflections and Perspectives", Academy of Sciences of Lisbon, June 1989 (within the Academy bicentennial celebrations).
- Chairman of the symposia on "New Trends in Molecular Electrochemistry", Academy of Sciences of Lisbon, 2003.
- Chairman of the "XII Meeting of the Portuguese Electrochemical Society", Academy of Sciences of Lisbon, 2003.
- Chairman of the 1st year AQUACHEM (EU Network) meeting, Academy of Sciences of Lisbon, 2005.

- Coordinator of the colloquium on "Biology and Chemistry of Evolution" within the cycle of conferences on "The Darwinism, Two Hundred Years After", Academy of Sciences of Lisbon, 2009.
- Coorganizer of the first CATSUS Workshop (Catalysis and Sustainability PhD Program), Academy of Sciences of Lisbon, 2015.
- Coordinator of the "Periodic Table International Year Celebratory Chemistry Symposium", Academy of Sciences of Lisbon, 2019.

"Elogios Históricos" (Historical Evocations) and "Saudações a Recipiendários" (Recipient Salutations)

Nominated orator for (plenary) sessions in honor of past and new academicians:

- "Elogio Histórico" (Historical Evocation) of the Academician Herculano de Carvalho, June 18th, 2015 (see V.30). http://www.acad-ciencias.pt/document-uploads/6918960_2015-06-18-pombeiro-e-redinha.pdf
- "Saudação ao Recipiendário" (Recipient Salutation to) Prof. José Simões Redinha as Academy Full Member, December 4th, 2014 (see V.29). http://www.acad-ciencias.pt/document-uploads/7079120_2014-12-04-redinha_pombeiro.pdf
- "Saudação ao Recipiendário" (Recipient Salutation to) Prof. Sebastião Formosinho as Academy Full Member, December 3rd, 2015 (see V.31). http://www.acad-ciencias.pt/document-uploads/6701912_2015-12-03-apombeiro-saudacao.pdf
- "Evocação Histórica" (Historical Evocation) of the Academician João J.R. Fraústo da Silva, November 17th, 2022 (see V.62). https://comum.rcaap.pt/bitstream/10400.26/45389/1/elogio_historico_do_academico_joao_jose_frausto_da_silva.pdf

Academy Books

- Coordinator (with Academician L.M. Câmara Pina) of the publication of the book "New Trends in the Chemistry of Nitrogen Fixation", J. Chatt, L.M. Câmara Pina and R.L. Richards (eds.), Academy of Sciences of Lisbon (national edition), 1982, within the "Frontiers of Knowledge" series of the Academy bicentennial celebrations (international edition by Academic Press, London, 1980; Russian edition by MIR Editions, 1983).
- Coordinator of the book *Portugaliae Electrochimica Acta*, 1983, within the Academy bicentennial celebrations, which became the 1st volume of the international research journal of the Portuguese Electrochemical Society.
- Coordinator of the book "Cold Nuclear Fusion - Analysis and Perspectives" (in Portuguese), Academy of Sciences of Lisbon, 1991.
- Editor of the book "Trends in Molecular Electrochemistry", A.J.L. Pombeiro (ed.), C. Amatore (co-ed.), Marcel Dekker / Fontis Media, New York / Lausanne, 2004, published under the auspices of the Academy as the 1st volume of its resumed "Frontiers of Knowledge" series (see also its "Preface" by M.Toscano Rico, F. Dias Agudo, A.J. L. Pombeiro: V.22).
- Coordinator of the e-book "Celebration of the Periodic Table of the Elements at the Academy of Sciences of Lisbon. A Chemistry Symposium", Academy of Sciences of Lisbon, 2020 (ISBN: 978-972-623-394-7). The contributions to this book are also included in the *Memórias* of the Class of Sciences, vol. XLVIII, 2022.

- As Member of the Commission for Publications of the Academy (1981-2007), also (co)coordinated the publication of a variety of books, usually authored by academicians and other invited contributors, such as:
  - The series *Memórias* (including all the delayed volumes of the two Classes and reestablishing the regular publication of the series);
  - *Academy books within the bicentenary celebration programme*, namely the following ones (in Portuguese):
  "History and Development of Science in Portugal until the XXth Century" (2 vols., 1986), "History and Development of Science in Portugal in the XXth Century" (3 vols., 1992), "Problematics of Drug in Portugal" (1988), "Problematics of Tabagism in Portugal" (1988), "Problematics of Alcoholism in Portugal" (1989), "Colloquium on Euthanasia" (1993), "Thermodynamics and Reactivity of Molecular Systems" (1994), "Bioethics and the Future" (1995), "Celebrations of the II Centenary of the Academy of Sciences of Lisbon" (1995); *Fac-simile* of the XVIth century atlas (1563) "Atlas de Lázaro Luís" (1990).

Publications at Academy books and Memories (Memórias) (reference codes given in this and next paragraphs are those at the appropriate sections of this *curriculum vitae*): I.2, I.3, I.5, I.15, I.128; II.1, II.17, II.22, II.23, II.27, II.34, II.43; V.8, V.9, V.29, V.30, V.31, V.55.
Publications about the Academy: V.11, V.15, V.22.
Invited Lectures presented at the Academy: 1, 44, 76.
Invited Lecture about the Academy: 57.
Speeches or allocutions at the Academy*:* 1, 2, 3, 8 -11, 25, 27 - 30, 41, 72.
Communications at Academy Sessions (besides those mentioned above): 8, 12, 17, 29, 44, 93.
Presentations at Conferences held at the Academy (besides those mentioned above): 47 ("Other Invited Lectures" section); 71, 93, 290-293, 557-561, 715, 737-745 ("Presentations at Conferences" section).
Other Activities at the Academy: Coordination and presentation (as President of the Scientific Council of the Academy) of the Evaluations, by this Council, of the Annual Activity Reports and Annual Planned Activities of this Academy (since 2022); and writing-up the minutes of the Scientific Council sessions.

AT THE COLLEGE OF CHEMISTRY OF THE UNIVERSITY OF LISBON

- Founding President of the College of Chemistry of the University of Lisbon (2017).
- Coordinator of an *ad hoc* commission towards the foundation of the College of Chemistry of the University of Lisbon (2014).
- Member of the Commission for the Constitution of the College of the University of Lisbon in the area of Chemistry (nominated by the Rector through the *Despacho 11472/2015, Diário da Repúblca*, 2nd Series, no. 200, October 13th, 2015).
- Coordinator of the Installation Commission of the College of Chemistry of the University of Lisbon (nominated by the Rector through the *Despacho 12081/2016, Diário da Repúblca*, 2nd Series, no. 194, October 10th, 2016).
- Coordinator of the activities of the Installation Commission namely towards the elaboration of the *Regulamento* (Bylaws) and *Regimento* of the College, its plan of

activities and budget proposal, which were approved (2017) by the Rector and by the College Assembly.
- Coordinator of the structuring of the College according to the *Regulamento* and *Regimento*, and of its Grants (PhD and support to PhD) and Prizes *regulamentos* proposals.
- Coordinator/founder of the College *Website* (with M. Fátima Guedes da Silva and Nuno Conceição, 2018-19), of the College *Newsletter* (with M. Fátima Guedes da Silva and Nuno Conceição, 2019), of the *Vade-mecum* of the Chemistry Research at the University of Lisbon (with Nuno Conceição, 2019) and of the Survey of the Companies with activities in Chemistry and Chemical Engineering in Portugal (with Nuno Conceição, 2018).
- Proponent of the IST - Beijing University of Chemical Technology (BUCT, China) Students Exchange Protocol (2019).
- Head of the delegation of the University of Lisbon and of its College of Chemistry for the visit to the Beijing University of Chemical Technology, December 2-9th, 2018.
- Interviewee in the article for the presentation of the College of Chemistry of the University of Lisbon: "Unite under the Name of Chemistry" (in Portuguese), in Journal *Público*, Supplement *Perspectives*, February 6th, 2019 (3 pages).
- Coordinator of the meetings of the College with the industrial sector (various selected companies and associations) (2018-19).
- Representative of the College in the meeting of the Rector of the University of Lisbon with the delegation of the Beijing University of Chemical Technology, Rectory of the University of Lisbon, May 11th, 2018.
- President of the Scientific Committee of the 1st Meeting of the College of Chemistry of the University of Lisbon ("Chemistry in the Research of the Universidade de Lisboa"), Rectory, University of Lisbon, July 20-21, 2017.
- President of the Scientific Commision of the 2nd Meeting of the College of Chemistry of the University of Lisbon ("Chemistry PhD Meeting"), Rectory, University of Lisbon, December 4-5, 2017.
- President of the Scientific Commision of the 3rd Meeting of the College of Chemistry of the University of Lisbon & Summer School, Rectory, Lisbon, June 27-29, 2018.
- Coordinator of the Scientific Commission of the 4th Meeting of the College of Chemistry of the University of Lisbon, "Chemistry: Shaping the Future" (which comprehends also the Workshop with Industry and the Summer School), Rectory, Lisbon, July 16-19, 2019.
- Coordinator of the various Reports on the activities of the College for the Rectory and for the Internal Evaluation Group of the University of Lisbon (2017-19).
- Chair of the various internal meetings of the College (2017-19) and of its previous *ad hoc*, constitution and installation commissions (2014-17).
- Various allocutions, presentations and forewords representing the College (see sections on "Other Invited Lectures at Scientific Institutions" and "Speeches and Allocutions").
- Proponent (with M. Fátima Guedes da Silva) of the logogram of the College (2017).

AT THE INSTITUTO SUPERIOR TÉCNICO

(besides Centro de Química Estrutural, indicated separately)

- Member of the Board *(Vogal da Mesa)* of the General Assembly of the Associação do Instituto Superior Técnico (IST) para a Investigação e Desenvolvimento (IST-ID, IST Association for Research and Development) (since 2021).
- Member of the Scientific Council of the Instituto Superior Técnico (IST) (2017-19).

- Member of the IST Internal Panel of the European Research Council (ERC) Acceleration Programme (since 2021).
- Member of the Commission for the Management of Open Positions ("Comissão de Vagas") of the Scientific Council of the IST (2017-19).
- Member of the 3rd Cycle Commission of the Scientific Council of the IST (2018).
- Member of the Commission of the IST Research Units Coordinators (2015-19).
- Coordinator of the proposal for *Doctor Honoris Causa* award by the University of Lisbon to Prof. Vadim Yu. Kukushkin (2018) (upon approval of the proposal, AJLP was appointed as the awardee "Godfather").
- Director of the FCT *PhD program on "Catalysis and Sustainability"* (CATSUS) since its beginning, 2014 (a consorcium involving the Universidade de Lisboa, the Universidade de Coimbra and the Universidade Nova de Lisboa).
- President of the Directive Board and of the Executive Committee of the CATSUS PhD Program (since its beginning, 2014).
- Coordinator of the calls for the CATSUS fellowship programmes (5 editions since 2014).
- Coordinator of the CATSUS Annual Reports.
- Organizer of the annual visits of the CATSUS External Advisory Committee (since 2015).
- Co-organizer of the 1st CATSUS Workshop (Academy of Sciences of Lisbon, 2015).
- Member of the Organization of the 2nd CATSUS Workshop (University of Coimbra, 2016).
- Member of the Executive Committee of the 3rd CATSUS Workshop (Faculty of Sciences, University of Lisbon, 2017).
- Member of the Scientific Commission of the 4th CATSUS Workshop (ITQB, Oeiras, 2018).
- Chairman of the 5th CATSUS Workshop (virtual, 2020).
- Chairman of the 6th CATSUS Workshop (virtual, 2021).
- Chairman of the 7th CATSUS Workshop, 2022 (held at the XXII International Symposium on Homogeneous Catalysis, ISHC, July 2022, Lisbon).
- Coordinator of the proposal to the FCT of the CATSUS PhD Program (2013).
- Coordinator of the Scientific Area of Synthesis, Molecular Structure and Chemical Analysis (Department of Chemical and Biological Engineering or Department of Chemical Engineering, IST) (2009-14).
- Member of the Scientific Commissions of the PhD (2009-19) and MSc (2009-16) courses on Chemistry (Department of Chemical and Biological Engineering or Department of Chemical Engineering, IST.
- Responsible professor for the Dual Master Program in Chemistry at the IST (IST-Univ. Camerino, since its creation, 2009).
- Member of the Scientific Board of the PhD course "Chemical and Pharmaceutical Sciences and Biotechnology" of the International School of Advanced Studies at the University of Camerino (2017-).
- Coordinator of the PhD Programme on Chemistry (IST) (2000-03).
- Representative of the Inorganic Chemistry Section on the Coordination Commission of the School/Department of Chemical Engineering (IST) (1981-84).
- Coordinator of the Inorganic Chemistry Section of the Department of Chemical Engineering (IST) (1983-84).
- Member of the Commission for the Management of Positions ("Comissão de Gestão de Lugares") of the Department of the Nuclear Sciences and Engineering (IST) (2015-16).

AT THE CENTRO DE QUÍMICA ESTRUTURAL

- President of the Centro de Química Estrutural (CQE) (2015-19, 4 years) *(ca.* 180 Integrated Doctoral Members within a total of *ca.* 390 registered Members including the PhD students and the Collaborator Members).
- Coordinator of the Coordination and Executive Commissions of the CQE (2015-19, 4 years).
- Founder and Coordinator of the CQE "Synthesis and Catalysis" Thematic Line (2015-19).
- Founder and Coordinator of the CQE "Coordination Chemistry and Catalysis" Research Group and of all its precedents (since late 70s).
- Coordinator of the restructuring of the CQE involving, *inter alia*, the creation of a second site at the Faculty of Sciences of the University of Lisbon, the scientific reorganization of the Groups (10), the creation of the Thematic Lines (4), and the rehabilitation of laboratories.
- Coordinator of the CQE application to the FCT for evaluation and 2015-2020 pluriannual funding (evaluated as Excellent).
- Coordinator of the Commission for establishing the new By-Laws of the CQE (approved and published at *Diário da República*, 2nd Series, no.116, June 17th, 2015).
- Organizer of the visit of the External Advisory Board to the CQE (2016).
- Coordinator of the group for establishing the research Priority Areas of the CQE (2017).
- Establisher of the Commissions for Safety (2015), for the new Website (2018) and for the Dissemination of Science (2018) at the CQE.
- Coordinator of the annual reports for the FCT, for the IST and for the Rectory of the University of Lisbon, and of the annual surveys to the National Scientific and Technological Potential for the Directorate-General for Education and Science Statistics (2015-18, at the CQE).
- Member of the Commission for restructuring the CQE (2018) and of its application to the FCT for evaluation and 2018-2022 pluriannual funding.
- Coordinator of the Commission for the establishment of the new Website of the CQE (2018).
- Coordinator of the calls for Research Contracts under the Decree-Law 57/2016 and the Law 57/2017 for the CQE (24 appointed researchers) (2018).
- Creator of the CQE 40 years celebratory medal (2015).
- Establisher of the first CQE Distinguished Fellow Awards (2017-18).
- Establisher of the first CQE Emeritus Member Awards and organizer of the awarding ceremonies, IST (May 24th and Dec. 19th, 2018).
- Interviewee in the article for the presentation of the CQE: "CEQ, Four Decades of Interdisciplinar Knowledge" (in Portuguese), in Journal *Público*, Supplement *Perspectives*, pp. 29-31, October 10th, 2018.
- Member of the Directive Council of the CQE (since 2001).

AT THE PORTUGUESE ELECTROCHEMICAL SOCIETY (and akin societies)

- Co-founder and member of the Portuguese Electrochemical Society (since 1983).
- Co-founder of the international journal *Portugaliae Electrochimica Acta* (1983) and of the Library of the Portuguese Electrochemical Society.
- President of the Portuguese Electrochemical Society (1988-89, 1994-95, 2009-14).
- Vice-President of the Portuguese Electrochemical Society (1990-91, 2018-).
- Secretary of the Portuguese Electrochemical Society (1983-87).
- Establisher of the *Prize for Young Researcher in Electrochemistry*, of the Portuguese Electrochemical Society (2010).

- Establisher of the *Portuguese Electrochemical Society Prize* (2012).
- Proponent (and representative of the Portuguese Electrochemical Society) for the establishment of *collaboration protocols* with the Spanish Royal Chemical Society (Specialized Group on Electrochemistry) (Valladolid 1989 and Tenerife 1990) and with the Mendeleev Chemical Society of Moscow (Electrochemistry Division) (Moscow, 1991).
- Chairman of the III National Meeting on Electrochemistry (Academy of Sciences of Lisbon) (1982).
- Chairman of the symposium on "New Trends in Molecular Electrochemistry" (Academy of Sciences of Lisbon) (2003).
- Chairman of the XII Meeting of the Portuguese Electrochemical Society (Academy of Sciences of Lisbon) (2003).
- Member of the Editorial Advisory Board of the Journal *Portugaliae Electrochimica Acta* (since 1998).
- Representative of the Portuguese Electrochemical Society at the session of theWorking Party on Electrochemistry of the Federation of European Chemical Societies, held in Prague, 1990.
- Member of the Organizing Committees of the Meetings of the Portuguese Electrochemical Society (1984-91) and of the preceding National Electrochemical Meetings (1981-83).
- Member of the Scientific Committee of the XV Meeting of the Portuguese Electrochemical Society (Lisbon, 2008).
- Member of the Organizing and Scientific Committee of the XVI Meeting of the Portuguese Electrochemical Society (XII Iberian Meeting of Electrochemistry) (Lisbon, 2010).
- Member of the Organizing Committee of the XXXII Meeting of the Electrochemistry Group of the Spanish Royal Society (XIII Iberian Meeting of Electrochemistry) (Murcia, 2011).
- Member of the Organizing and Scientific Committee of the XVII Meeting of the Portuguese Electrochemical Society (XIV Iberian Meeting of Electrochemistry) (Funchal, 2012).
- Member of the Organizing Committee of the XXXIV Meeting of the Electrochemistry Group of the Spanish Royal Society (XV Iberian Meeting of Electrochemistry) (Valencia, 2013).
- Member of the Organizing and Scientific Committee of the XVIII Meeting of the Portuguese Electrochemical Society (Porto, 2013).
- Member of the Scientific Committee of the XIX Meeting of the Portuguese Electrochemical Society (XVI Iberian Meeting of Electrochemistry) (Aveiro, 2014).
- Member of the Scientific Committee of the XX Meeting of the Portuguese Electrochemical Society (Braga, 2015).
- Member of the Scientific Committee of the XXI Meeting of the Portuguese Electrochemical Society (XVIII Iberian Meeting of Electrochemistry) (Bragança, 2016).
- Member of the Scientific Committee of the XXII Meeting of the Portuguese Electrochemical Society (Ponta Delgada, Azores, 2017).
- Member of the Scientific Committee of the XXIII Meeting of the Portuguese Electrochemical Society (Porto, 2018).
- Member of the Scientific Committee of the XXIV Meeting of the Portuguese Electrochemical Society (Tomar, scheduled for 2020, but postponed to 2022 for safety reasons in view of the pandemic).
- Member of the Scientific and Organizing Committees of the XXV Meeting of the Portuguese Electrochemical Society (Coimbra, 2023, to be held).
- Member of the Organizing Committee of the "Electrochemistry Day", Lisbon, 2011.

- Representative of the Portuguese Electrochemical Society at the General Assembly and at the Molecular Electrochemistry Division of the ISE (International Society of Electrochemistry), Nice, France, 2010.
- Member of the Scientific Committee of the XXIV Meeting of the Portuguese Chemical Society, Coimbra, 2015.
- Member of the National Organizing Commission and of the Scientific Commission of the XXV National Meeting of the Portuguese Chemical Society, Lisbon, July 16-19, 2017.
- Representative of the Portuguese Chemical Society at the Annual Meeting of the Organometallic Chemistry Division of the EuCheMS (European Association for Chemical and Molecular Sciences), Nurnberg, Germany, 2010
- Member of the Scientific Committee of the 1st Portuguese Young Chemists Meeting, Portuguese Chemical Society (Lisbon, 2008).
- Member of the Scientific Committee of the XI National Meeting on Catalysis and Porous Materials and the II Meeting of the Carbon Group of the Portuguese Chemical Society (Aveiro, 2021).
- Coordinator (with José J. G. Moura) of the Fraústo da Silva Tribute Session, XXVIII National Meeting of the Portuguese Chemical Society, Aveiro, July 26th, 2023.
- Member of the Scientific Committee of the XII National Meeting on Catalysis and Porous Materials of the Portuguese Chemical Society (Coimbra, 2024).
- Proponent of various distinctive and celebratory items of the Portuguese Electrochemical Society: logogram (1984, design with collaboration of M.F.C. Guedes da Silva); 5thAnniversary medal (1989); V Lustrum medals (silver and contrasting black versions) (2010, design with collaboration of M.F.C. Guedes da Silva); Prizes trophies (2012).
- Member of juries of various Prizes of the Portuguese Electrochemical Society and of the Portuguese Chemical Society (see section on Evaluation Activities).

AT CONGRESSES

(*beyond those of the abovementioned institutions, of the College of Chemsitry of the University of Lisbon and of the CATSUS PhD Program*)

- Chairman of the XXII International Symposium on Homogeneous Catalysis (ISHC), Lisbon, July 2022.
- Designer of the Medal of the XXII ISHC.
- Chairman (with K.T. Mahmudov) of the 1st International Conference on Non-covalent Interactions (ICNI), Lisbon, Sept. 2019.
- Proponent (with K.T. Mahmudov) of the "Van der Waals Prize" (for senior and young scientists) of the ICNIC (2019).
- Designer (with K.T. Mahmudov) of the Medal of the 1st ICNI, 2019.
- Chairman of the 7th EuCheMS Congress on Nitrogen-Ligands, Lisbon, Sept. 2018.
- Chairman of the XXV International Conference on Organometallic Chemistry (XXV ICOMC, Lisbon, Sept. 2012).
- Proponent of the silver/gold jubilee ICOMC celebratory items (2012): book (Editor, see below) and medal (also designer).
- Chair of the XXV ICOMC International Advisory Board meeting (Lisbon, 2012).
- Member of the International Advisory Board (IAB) of the International Conferences on Non-covalent Interactions (ICNI): 1st (Lisbon, 2019), 2nd (Strasbourg, 2022).
- Member of the International Advisory Boards (IAB) of the XVII, XXI-XXIX International Conferences on Organometallic Chemistry (ICOMC) (Munich, Germany, 1998; Vancouver, Canada, 2004; Saragoza, Spain, 2006; Rennes, France, 2008; Taipei, Taiwan,

2010; Lisbon, Portugal, 2012; Sapporo, Japan, 2014; Melbourne, Australia, 2016; Florence, Italy, 2018; Prague, Czech Republic, 2022).

- Member of the International Advisory Board of the 19th -23rd International Symposium on Homogeneous Catalysis (ISHC) (Ottawa, 2014; Kyoto, 2016; Amsterdam, 2018; Lisbon, 2022; Trieste, 2024).
- Member of the Program Committee of the 6th International Scientific Conference "Advances in Synthesis and Complexing", RUDN University, Moscow, Russia, September 26-30, 2022.
- Member of the Planning Committee of the "International Conferences on Coordination Chemistry" (ICCC 1984, 1986, 1988, 1990, 2014).
- Organizer/Chair of the Thematic Symposium "Functionalization of Alkanes" at the 41st International Conference on Coordination Chemsitry (ICCC) (Singapore, 2014).
- Member of the National Scientific Commission of the XXVI Ibero-American Congress on Catalysis (CICat), Coimbra, September 9-14, 2018.
- Member of the Scientific Committee of the 13th International Chemical and Biological Engineering Conference (CHEMPOR 2018), Aveiro, 2018.
- Member of the Organizing Commission of the Symposium 11 ("New Important Frontiers in Molecular Electrochemistry") at the 66th Annual Meeting of the International Society of Electrochemistry (ISE), Taipei, 2015.
- Director of the NATO Advanced Research Workshop on "Molecular Electrochemistry of Inorganic, Bioinorganic and Organometallic Compounds" (Sintra Portugal, 1992) (Co-director: J. McCleverty).
- Chairman of the symposium "New Trends in Molecular Electrochemistry" (Academy of Sciences of Lisbon, 2003).
- Member of the Scientific Committees of the "Journeés d' Électrochimie" 1989 (Montpellier, France) and 1991 (Brest, France).
- Member of the Scientific Committee of the "IX Iberoamerican Congress on Electrochemistry" (Tenerife, 1990).
- Member of the Scientific Committee (1st) and/or the International Advisory Boards (2nd - 14th) of the "International Schools of Organometallic Chemistry" (ISOC) [Camerino, Italy, 1997, 1999, 2001, 2003, 2005, 2007, 2009, 2011, 2013, 2015, 2017 (San Benedetto del Tronto), 2019, 2021, 2023].
- Member of the Scientific Committee of the meeting on "Electrochemistry: Long- and Short-Lived Intermediates in Coordination and Organometallic Compounds" (Siena, Italy, 1998).
- Member of the Scientific Committee of the 1st - 5th "Chianti Electrochemistry Meetings on Metal containing Molecules" (Siena, Italy, 2000, 2002, 2004, 2006 and 2008).
- Member of the Scientific Committee of the "XV Congress of the Iberoamerican Electrochemical Society" (Évora, Portugal, 2002).
- Member of the International Scientific Committee of the symposium "Organometallics and Catalysis" (Rennes, France, 1999).
- Member of the Scientific and Organizing Committee of the "45th Annual Meeting of the International Society of Electrochemistry" (Porto, 1994).
- Member of the Organizing Committee of the "26th Internat. Conference on Coordination Chemistry" (Porto, 1988).
- Member of the Organizing Commissions of the 12th and the 13th "Summer Schools on Coordination Chemistry" (Karpacz, 1993, and Polanica-Zdrój, Poland, 1996, respectively).
- Member of the International Organizing Committee of the 14th and 15th "Summer School on Coordination Chemistry" (Polanica- Zdrój, 1999, and Szklarska Poreba, 2004, Poland).

- Member of the Organizing Committee of the "24th IUPAC Conference on Solution Chemistry" (Lisbon, 1995).
- Member of the International Advisory Board of the 2nd and 3rd International Conferences on Progress in Inorganic and Organometallic Chemistry" (Polanica-Zdrój, Poland, 1997 and 2000).
- Chairman of the 1st year AQUACHEM meeting (Academy of Sciences of Lisbon) (2005).
- Member/coordinator of the Commission for the Program of the session on "Chemistry and Sustainability" of the Ciência 2016 Congress of the Fundação para a Ciência e Tecnologia (FCT).

EVALUATION ACTIVITIES AND COMMISSIONS

- Member of the Advisory Panel on the Advanced Study Institutes Programme (**NATO** Science Programme) (1995-98).
- Member of the Physical and Engineering Science and Technology (PST) Panel of the **NATO** Science Programme (1999).
- Member of the External Evaluation Commission of the Physical Sciences of the **Portuguese Universities** (Ministry of Science and Higher Education) (2002-04).
- Member of the External Review Panel for the external accreditation (by the Independent Agency for Quality Assurance in Education) of the Chemistry Program of the **Baku State University**, Azerbaijan (2021).
- Member of the Panel of External Experts assessing the Engineering's Chemical Processes Department of the **University of Padova**, Italy (2005).
- Member of the Evaluation Panel of the PhD theses of the PhD course on Chemical Sciences of the **University of Camerino** (2012).
- **Proponent of various Prizes**:
  - The "Van der Waals Prize" (for senior and young scientists) of the ICNIC (International Conference on Non-covalent Interactions) (2019) (with K.T. Mahmudov);
  - The Prizes of the Portuguese Electrochemical Society (for young and senior scientists, 2010 and 2012, respectively);
  - The Prize of the ISHC (International Symposium on Homogeneous Catalysis) (establishment under progress for the young scientists);
  - CQE (Centro de Química Estrutural) Distinguished Fellow Awards (2017-18);
  - CQE (Centro de Química Estrutural) Emeritus Member Awards (2018).
- **Nominator** (official) for the **VinFuture Prizes** of the VinFuture Foundation (inaugural edition, 2021; 2022) (Hanoi, Vietnam): Grand Prize; Specific Prizes for Outstanding Achievements in Emerging Fields, for Developing Country Innovators and for Women Innovators.
- **Nominator** for various other prizes, such as: the Electrochimica Acta Gold Medal of the International Society of Electrochemistry (ISE), the Prince of Asturias Prize, the Portuguese Electrochemical Society Prize for senior scientists, the Luso-French prize of the Portuguese Chemical Society and the Luso-Spanish (Lourenço-Madinabeitia) prize of the Portuguese Chemical Society.
- **Nominator** for various national and foreign members of the Academy of Sciences of Lisbon (since 1988).
- Member of the **Jury of various prizes:**
  - Van der Waals prizes (for Senior and Young Scientists) of the ICNI (since their creation by his initiative, 2019);

- "Prix Tremplin Mariano Gago" for research, to promote the bilateral French-Portuguese cooperation (French Ministry of Higher Education, Research and Innovation; French and Portuguese Academies of Science) (inaugural edition, 2022).
- Gulbenkian Science prize 1994 (Basic Sciences) and 1995 (Applied and Technological Sciences) (as representative of the Academy of Sciences of Lisbon);
- Prizes of the Portuguese Electrochemical Society (since their creation, 2010 and 2012, under his initiative);
- Prizes of the Portuguese Chemical Society (2014, 2016): Ferreira da Silva and Vicente Seabra;
- Luso-Spanish (Lourenço-Madinabeitia) prize of the Portuguese Chemical Society and the Royal Spanish Chemical Society (2015);
- Luso-French prize of the Portuguese Chemical Society and the French Chemical Society (2020, 1st time; 2021);
- Aboim Sande Lemos prize (Biochemistry applied to nutrition) of the Academy of Sciences of Lisbon (1983);
- Technical University (UTL) prizes: Young Researchers Prizes (UTL/Deloitte and UTL/Caixa Geral de Depósitos), 2010; Scientific Prizes (UTL/Santander) 2011.

- **Referee** for various other **prizes**, *e.g.,* the Boa Esperança Prize on Science and Technology, 1991, 1993 and 1995 [National Board for Scientific and Technological Research (JNICT), Secretariat of State for Science and Technology], the VIII European Contest for Young Scientists, 1996 [EC Commission - Youth Foundation and JNICT (Portugal)], the "Academia Europaea" prizes (for young Russian scientists, 2006, 2009, 2013), and the Research Corporation (Science Awards).
- **Referee** for **grants and projects** applications, *e.g.,* at JNICT, PRAXIS XXI, Calouste Gulbenkian Foundation, Czech Academy of Sciences, Czech Science Foundation,Italian Ministry for Education University and Research (MIUR, Grant Review Committee), Israel Science Foundation.
- **Referee** for **book** proposals, *e.g.,* at Wiley, Elsevier, and Springer.
- **Referee** for various scientific **journals**, *e.g., Chem. Rev., Coord. Chem. Rev., J. Am. Chem. Soc., Angew. Chem., Inorg. Chem*., *Chem. Eur. J.*, *Eur. J. Inorg. Chem.*, *Eur. J. Org. Chem.*, *Crystal Growth & Design*, *Organometallics, Adv. Synth. Cat.*, *ChemCatChem*, *J. Cat.*, *J. Mol. Cat. A: Chem.*, *Catal. Today, Catalysts, J. Organometal. Chem., New J. Chem., Inorg. Chim. Acta*, *J. Med. Chem.*, *J. Biol. Inorg. Chem*., *J. Bioinorg. Chem., Inorg. Synth.*, *J. Electroanal. Chem.*, *Comptes Rendus*, *Polyhedron, Tetrahedron Letters, Coll. Czech. Chem. Commun., Monatsch. Chem., Portugaliae Electrochim. Acta., J. Braz. Chem. Soc.*, etc
- Member (in many cases also President) of numerous **academic Juries**, for admission and progression in academic careers or for PhD and MSc theses, or for habilitation, at various Portuguese and foreign Universities.
- Member of the **Monitoring Committee** ("Comissão de Acompanhamento") of a new Assistant Professor (Dr. Manuel Souto) at the University of Aveiro (since 2020).
- Member of the **IST Internal Panel of** the European Research Council (**ERC) Acceleration Programme** for proposals evaluations (since 2021).
- Coordinator (as President of the **Scientific Council** of the Academy of Sciences of Lisbon) of the Evaluations of the Annual Activity Reports and Planned Activities of this Academy (since 2023).

EDITORIAL ACTIVITIES

- Member of the Editorial Advisory Board of the *ACS Catalysis* (2011, the year of foundation), *Inorganic Chemistry Communications* (since 2003), *Trends in Inorganic Chemistry* (since 2008), *Letters in Organic Chemistry* (2008-10) and *Portugaliae Electrochimiac Acta* (since 1998).
- Member of the International Editorial Board of the *Comptes Rendus – Chimie* (French Academy of Sciences; since 2021), *Journal of the Chinese Institute of Engineers* (2011-16), *Catalysts* (since its foundation, 2010), *Fine Chemical Technologies* (Lomonosov Moscow State University of Fine Chemical Technologies, now MIREA - Russian Technological University; since 2015), *Journal of Applied and Fundamental Sciences* (Assam Don Bosco University, India, since 2016) and *New Materials, Compounds and Applications* (Jomard Publishing, since its foundation, 2017).

- Editor of **books**:
  - "Cold Nuclear Fusion - Analysis and Perspectives" (in Portuguese), Academy of Sciences of Lisbon, 1991 (Coordinator).
  - "Molecular Electrochemistry of Inorganic, Bioinorganic and Organometallic Compounds" (NATO Advanced Research Workshop), A.J.L. Pombeiro and J. McCleverty (eds.), NATO ASI Series, Kluwer Academic Publishers, Dordrecht, The Netherlands, 1993.
  - "Trends in Molecular Electrochemistry", A.J.L. Pombeiro (ed.), C. Amatore (co-ed.), Marcel Dekker / Fontis Media, New York / Lausanne, 2004.
  - "Advances in Organometallic Chemistry and Catalysis" (*The Silver/Gold Jubilee ICOMC Celebratory Book)*, A.J.L. Pombeiro (ed.), J. Wiley & Sons, 2014 (ISBN: 9781118510148).
  - "Non-covalent Interactions in the Synthesis and Design of New Compounds", A.M. Maharramov, K.T. Mahmudov, M.N. Kopylovich, A.J.L.Pombeiro (eds.), J. Wiley & Sons, 2016 (ISBN: 978-1-119-10989-1).
    Translated into various languages: Russian, Spanish, Vietnamese and Azerbaijani.
    Examples:
    Russian translation: "Нековалентные взаимодействия в дизайне и синтезе новых соединений", А.М. Магеррамова, К.Т. Махмудова, М.Н. Копыловича, А.Дж.Л. Помбейро (Editors), ТЕХНОСФЕРА (Technosphere), Москва (Moscow), 2016 (ISBN: 978-5-94836-472-8) (Translator: Valentine G. Nenajdenko)
    http://www.chem.msu.ru/rus/books/2016/dizain/welcome.html
    https://www.chitai-gorod.ru/catalog/book/1018318/
    Spanish translation: "Interacciones no covalentes en la síntesis y el diseño de nuevos compuestos", Síntesis, 2020 (ISBN-10 : 8491714464; ISBN-13 : 978-8491714460)
    https://www.sintesis.com/investigaci%C3%B3n-237/interacciones%20no%20covalentes%20en%20la%20s%C3%ADntesis%20y%20el%20dise%C3%B1o%20de%20nuevos%20compuestos-ebook-2815.html
  - "Alkane Functionalization", A.J.L. Pombeiro (ed.), M.F.C. Guedes da Silva (co-ed.), J. Wiley & Sons, Hoboken, NJ, USA, 2019 (ISBN: 9781119378808).
    (Online ISBN: 978111937925). https://doi.org/10.1002/9781119379256 (online).
  - "Non-covalent Interactions in Catalysis", K.T. Mahmudov, M.N. Kopylovich, M.F.C. Guedes da Silva, A.J.L. Pombeiro (eds.), Royal Sociey of Chemistry, 2019 (Print ISBN: 978-1-78801-468-7; ePub eISBN: 978-1-78801-751-0).

- "Vanadium Catalysis", M. Sutradhar, J.A.L. Silva, A.J.L. Pombeiro (eds.), Royal Sociey of Chemistry, 2021 (Print ISBN: 978-1-78801-857-9; PDF eISBN: 978-1-83916-088-2; ePub eISBN: 978-1-83916-089-9). https://doi.org/10.1039/9781839160882
- "Celebration of the Periodic Table of the Elements at the Academy of Sciences of Lisbon. A Chemistry Symposium", Academy of Sciences of Lisbon, 2020 (Coordinator). ISBN: 978-972-623-394-7. http://www.acad-ciencias.pt/document-uploads/6297027_periodic-table.-symposium-dec11-final.pdf
- As Member of the Commission for Publications of the Academy (1981-2007), he also coordinated the publication of a variety of books authored by academicians and other contributors (see above section "At the Academy of Sciences of Lisbon and Related Organizations").

- Coordinator of the special *Inorg. Chim. Acta* issue to celebrate Prof. J.J.R. Fraústo da Silva's career ("Protagonists in Chemistry", vol. 356, 2004). https://www.sciencedirect.com/journal/inorganica-chimica-acta/vol/356/suppl/C https://www.sciencedirect.com/science/article/pii/S002016930300330X?via%3Dihub
- Guest Editor (with M.F.C. Guedes da Silva) of the special *Inorg. Chim. Acta* issue on "Metal Systems for Sustainable Chemistry", vol. 455, Part 2, 2017, pp. 307-714.
- Guest Editor (with A. Burke) of the special *ChemCatChem* issue on "Catalysis in Portugal", 2018.
- Guest Editor of the *RSC* themed Web Collection on "Nitrogen-Ligands", 2019 (46 contributions). https://pubs.rsc.org/en/journals/articlecollectionlanding?sercode=dt&themeid=71f09576-9bf4-429f-91b5-97d78293c46d
- Guest Editor (with K.T. Mahmudov) of the RSC Themed Collection on "Non-covalent Interactions" (*CrystEngComm, Dalton, NewJChem, PhysChemChemPhys, RSC Advances*), 2019 (181 contributions). https://pubs.rsc.org/ja/journals/articlecollectionlanding?sercode=cp&themeid=74148df6-009a-43ee-9fbe-45f4d54f26eb
- Guest Editor (with A.P.C. Ribeiro) of the *Catalysts* special issue on "Catalysis in Unconventional Media", 2019.
- Guest Editor (with A. Karmakar) of the *Catalysts* special issue on "MOFs: Syntheses, Structures, and Catalytic Processes", 2021.
- Guest Editor (with K. Nomura and other editorial board members of the Organic and Polymer Chemistry Section) of the *Catalysts* Celebratory Special Issue entitled "10th Anniversary of *Catalysts*: Molecular Catalysts", 2022 (see V.61).
- Guest Editor (with K.T. Mahmudov) of the *Crystals* special issue on "Chalcogen Bonding in Crystalline and Catalyst Materials", 2018.
- Guest Editor (with K.T. Mahmudov) of the "International Symposium on Homogeneous Catalysis Virtual Collection" with the *Chemistry Europe* journals (*Chem-Eur J, ChemCatChem, EurJIC, EurJOC, ChemistryOpen, ChemsitrySelect, ChemPlusChem, ChemSusChem, ChemBioChem, ChemElectroChem, ChemPhotoChem, ChemPhysChem, etc*), 2022-2023 (64 contributions including 7 reviews). https://chemistry-europe.onlinelibrary.wiley.com/doi/toc/10.1002/(ISSN)9999-0001.ishc-xxii
- Guest Editor (with M. Kuznetsov and E. Alegria) of the *Catalysts* special issue on "Basic Catalysis: Catalytic Functionalization of Alkanes", ongoing.

- Co-Editor (with K. Nomura and other editorial board members) of the *Catalysts* special issue on "Exclusive Papers of the Editorial Board Members and Topical Advisory Panel Members of Catalysts in Section Catalysis in Organic and Polymer Chemistry", ongoing.
- Co-founder of the *Newsletter* of the College of Chemistry of the University of Lisbon, 1st issue, 2019.
- Coordinator (with M.F.C.Guedes da Silva and N.R. Conceição) of the *Vade-mecum, Research on Chemistry in the ULisboa,* College of Chemistry of the University of Lisbon, 2019.
- Co-founder of the journal *Portugaliae Electrochimiac Acta*, vol. I (published by the Academy of Sciences of Lisbon), 1983 (became the journal of the Portuguese Electrochemical Society after the foundation of this Society).
- Coordinator of the *Portugaliae Electrochimica Acta* Special Issue on "Electrochemical Research", Portuguese Electrochemical Society (5th anniversary celebratory issue), vol.7, 1989.
- Representative of the *Fine Chemical Technologies* journal (MIREA - Russian Technological University) in the application to SCOPUS (2020, accepted 2021).
- Member of the Commission for Publications/Editions of the Academy of Sciences of Lisbon (1981-2007).

PROTOCOLS OF COOPERATION

Proponent of the following inter-university exchange and cooperation agreements for teaching and research:

- *IST - St. Petersburg State University* (2002);
- *IST - University of Camerino*, Italy (Dual Master course, 2009);
- *Technical University of Lisbon - University of Camerino* (2010);
- *IST - Lomonosov Moscow State University of Fine Chemical Technology* (2013) (now MIREA - Russian Technological University);
- *IST - Nesmeyanov Institute of Organoelement Compounds* (INEOS, Moscow) (2013);
- Consortium of the institutions involved in the CATSUS PhD Program *(IST, CQE, IBB, FCUL, ITQB/UNL, FCT/UNL, UC)* (2014);
- *CQE - School of Chemistry and Chemical Engineeing, Guangxi University*, China (2015);
- *IST - School of Chemistry and Chemical Engineeing, Guangxi University*, China (2016);
- *IST - University of Jyvaskyla*, Finland, Erasmus Agreement (2nd cycle, Key Action 1 (Higher Education, Student and Staff Mobility)) (2016);
- *IST - Baku State University,* Azerbaijan (2022);
- *IST - Beijing University of Chemical Technology* (BUCT), China, Students Exchange Protocol (2019) and Master Dual Degree (in preparation).
- *IST - Hunan City University,* China (in preparation).

Proponent of protocols of cooperation of the *Portuguese Electrochemical Society* with:

- *Royal Spanish Chemical Society* (Specialized Group on Electrochemistry) (Valladolid 1989 and Tenerife 1990);
- *Mendeleev Chemical Society of Moscow* (Electrochemistry Division) (Moscow, 1991).

In the framework of the establishment of scientific cooperation agreements, he was the proponent and organized visits to the IST of delegations of the above Universities and Institute: *Saint Petersburg State University* (Prof. Vadim Kukuskin, a few visits), *University of Camerino* [Prof. Claudio Pettinari (who became Rector), Prof. Riccardo Pettinari, Prof.

Fabio Marchetti, a few visits], *Lomonosov Moscow State University of Fine Chemical Technology* [Prof. Valeriy V. Fomichev (Vice-Rector), Prof. Andrey V. Timoshenko (Vice-Rector), Prof. Tatiana Buslaeva, Dr. Anastasia Frolkova; IST, May 22-24, 2013], *INEOS* (Prof. Elena Shubina, Dr. Lidia Shulpina, various visits), *Guangxi University* (Prof. Zhen Ma, a few visits) and *University of Jyvaskyla* (Prof. Matti Haukka, a few visits).
He also proposed and was involved in the organization of the visit to Portugal of a delegation of the *Japan Society for the Promotion of Science* (JSPS) [Dr. Hiroyuki Miyamoto (Director, Strasburg Delegation), Dr. Atsuko Hisada (Deputy Director, Strasbourg Delegation) *et al*.; IST, May 19, 2015; Universidade Nova de Lisboa, May 21, 2015].
He had meetings with the Heads or their representatives of almost all the above foreign institutions, in their premises, for the arrangements towards or signing the respective cooperation protocols, *e.g.*: Prof. Claudio Pettinari (current Rector, University of Camerino); Prof. Alla K. Frolkova (Rector, Lomonosov Moscow State University of Fine Chemical Technology); Prof. Yu. N. Bubnov (Director, INEOS); Prof. Lisheng Wang (Dean, School of Chemistry and Chemical Engineering, Guangxi University); Prof. Tianwei Tan (President), Prof. Guangqing Liu (Dean, School of International Education), Prof. Jun Nie (Dean, College of Science), Dr. Yongsheng Wang (Vice Director, International Exchange & Cooperation Department), Dr. Jianya Zhao (Director, International Students Office), Dr. Shuai Zhang (International Chinese Education Centre) (Beijing University of Chemical Technology, BUCT).

POSITIONS AT FOREIGN INSTITUTIONS

- Distant Director (Head of Research Centre at the Research Institute of Chemistry, RIC) of the *Peoples' Friendship University of Russia (RUDN University),* Moscow, since 2021;
- Honorary Professor at *Saint Petersburg State University* (Institute of Chemistry), since 2019.
- Invited Chair Professor at the *National Taiwan University of Science and Technology,* since 2007.
- Honorary Chief Academic Advisor and Academician Research Platform Honorable Advisor at Kanghong (Yantai) *Environmental Protection Technology Co. Ltd*., China, since 2020.
- Coordinator (lecturer) of the courses on Homogeneous Catalysis at the Multinational DEA and Master in Molecular Chemistry at the *École Polytechnique* (Paris) (2003-2016).

PRIZES AND TRIBUTES

- Member of the *Academia Europaea* (2022).
- *Fellow* of the *European Academy of Sciences* (EURASC) (2019) (award ceremony on October 22nd, 2019).
- *Honorary Professor at Saint Petersburg State University (Institute of Chemistry, since 2019) (award ceremony on September 10th, 2019)*
- *Coordination Chemistry Reviews* Special Issue:
  "Coordination Compounds and Catalyis: a Special Issue in Honor of Prof. Armando J.L. Pombeiro" (Eds: G.B. Shul'pin, K.T. Mahmudov, L.M. Martins), 2019-2020 (virtual issue, 49 reviews):

https://www.sciencedirect.com/journal/coordination-chemistry-reviews/special-issue/10M1K9DXZVJ

"Editorial", by G.B. Sul'pin, D.C. Crans, K.T. Mahmudov, L.M. Martins

"Biographic Sketch of Prof. Armando J.L. Pombeiro", by G.B. Shul'pin, K.T. Mahmudov, L.M. Martins
https://www.sciencedirect.com/science/article/pii/S0010854518304491?via%3Dihub

- *Journal of Organometallic Chemistry* Special Issue:
  "Synthesis and Applications of Organometallic Compounds", dedicated to Prof. Armando J.L. Pombeiro (Eds: R. Adams, L.M. Martins, G.B. Shul'pin), 2018-2019 (virtual issue, 20 research papers and reviews):
  https://www.sciencedirect.com/journal/journal-of-organometallic-chemistry/special-issue/104P8Z6GCDQ

  "Editorial" and "Biosketch – Prof. Armando J. L. Pombeiro", by G.B. Shul'pin, L.M. Martins, R. Adams
- *"SCF French-Portuguese award"*, Société Chimique de France (French Chemical Society), 2018 (awarded for the 1st time) (award ceremony on May 16th, 2019).
- *"Vanadis award"*, 2018 (awarded by the vanadium international scientific community at the Vanadium 11 Conference, Montevideo, November 2018).
- *"Scientific Prize of the University of Lisbon"*, 2018 (awarded by this University and by the Caixa Geral Depósitos) [the highest ranked researcher, under productivity (publications in scientific journals) and scientific impact factor criteria, in Chemistry and Chemical Engineering].
- *Guest Lecturer at Saint Petersburg State University*, Russian Program on Iberian-American Cooperation, 2018 (awarded for the 1st time to the Science field).
- *"Portuguese Electrochemical Society prize"*, 2015.
- *Successor on the Chair* of the Academician Prof. Herculano de Carvalho at the Academy of Sciences of Lisbon, 2015.
- *"Madinabeitia-Lourenço prize"* (International Hispano-Portuguese prize), Royal Spanish Chemical Society, 2013.
- *Symposium "One Day on Organometallic Chemistry in honor of Armando J.L. Pombeiro",* University of Oviedo, 2014 (organized by the Group of Organometallic Compounds and Catalysis (COMORCA) of this University and by the Specialized Group of Organometallic Chemistry of the Royal Spanish Chemical Society).
- *"Ferreira da Silva prize",* Portuguese Chemical Society, 2012.
- *"Scientific prize of the Technical University of Lisbon*", 2007 (1st year, awarded by this University and by the Santander-Totta Bank) [the highest ranked researcher, under productivity (publications in scientific journals) and scientific impact factor criteria, within the Environmental, Biochemical, Biotechnological, Biological, Biological Engineering, Chemical Engineering, Nanomateriais, Nanotechnology, Materials and Chemical Sciences].
- *Invited Chair Professor* at the National Taiwan University of Science and Technology (since 2007).
- *"Stimulus for Excellence" prize*, awarded by the Foundation for Science and Technology (Ministry of Science and Higher Education), 2005.
- *J. Heyrovský Centennial Medal* ("J. Heyrovský Centennial Congress on Polarography", Praga, 1990).
- *Full Member (Membro Efectivo)* of the Academy of Sciences of Lisbon (since January1988).
- *"Dr. Mendonça Monteiro" prize*, awarded by the University of Porto, 1969 (the highest ranked student in the Chemistry courses).

- *Calouste Gulbenbian fellowship/prize* to attend the International Youth Science Fortnight, University of London, 1968 (representative of the University of Porto).
- *Best student award in Mineralogy and Geology* (Prof. M. Montenegro de Andrade, Faculty of Sciences of the University of Porto), 1967.
- *Rotary Club (Porto) scholar prize*, 1965-66.
- Various *Secondary School best student awards* (Alexandre Herculano High School, Porto, 1960s).

MAIN RESEARCH AREAS AND METHODS

His research activities in the general fields of Coordination, Inorganic, Bioinorganic and Organometallic Chemistries, Catalysis and Electrochemistry have been developed within the following *areas* whose systematic study has been often *introduced* by him (his Group) into his research Centre:

- *Activation of small molecules* with biological, industrial or environmental interest orrelated ones (such as alkanes, carbon dioxide, carbon monoxide, alkynes, phosphaalkynes, isocyanides, dinitrogen, nitriles, cyanamides, nitric oxide, oximes, olefins, azides, cyanates, etc.) by transition metal centres, and developing their application in *metal-mediated synthesis and catalysis*, namely by searching for mimetic systems of biological processes (*e.g.* catalysed by peroxidases, particulate methane monooxygenase, nitrile hydratases and nitrogenases), alternatives for industrial processes and new types of molecular activation with significance in fine chemistry.

Within this general area, the following themes can be mentioned, generally aiming the establishment of *active systems under mild, environmentally tolerable and sustainable conditions:*

  - *Catalytic functionalization of alkanes* (for the single-pot syntheses of added value compounds, *e.g.*, alcohols, ketones, carboxylic acids, esters or organo-halides);
  - *Catalytic aerobic oxidation of alcohols* to aldehydes and ketones;
  - *Catalytic C-C coupling* (*e.g.*, Suzuki-Miaura, Heck, Sonogoshira types);
  - *Catalytic C-C coupling of nitroaldol or Henry type;*
  - *Metal-mediated synthesis of organo-nitrogen compounds* (*e.g.*, oxadiazolines, oxadiazoles, carboxamides, acetylamides, imidoylamidines, iminoisoindolinones, phthalimides, phthalocyanines, cyano-olefins or tetrazoles);
  - *Non-covalent interactions* in synthesis, including, *e.g.*, *Resonance Assisted Hydrogen-bond (RAHB) and Pnicogen bond promoted reactions* (*e.g.*, isomerizations, activation to nucleophilic attack, liberation of ligands);
  - *Biomimetic* catalytic systems;
  - *Polynuclear, supramolecular and polymeric assemblies, synthesized by self-assembly,* with interesting magnetic, sorption and/or catalytic properties*;*
  - *Crystal engineering of coordination compounds;*
  - *Coordination and organometallic chemistries and catalysis in aqueous media*, by using new hydrosoluble catalysts;
  - *Metal-ligand cooperativity;*
  - *High pressure catalysis and catalysis in supercritical fuid media.*

- *Bioinorganic and biological studies*, focusing on biomimetic catalytic systems, synthesis of new *bioactive* complexes (with antitumor or antimicrobial activity), their toxicity

evaluation and identification of biological targets in the cells; selective *chemosensors* of biological ions.
- *Molecular Electrochemistry* of coordination and organic compounds, namely towardsapplications in electrosynthesis, electrocatalysis and in mechanistic studies, as well as in the establishment of potential-structure relationships, and in the induction of chemical reactivity by electron-transfer.
- *Mechanisms* of fast chemical (proton transfer) or electrochemical reactions (in the above fields).
- *Theoretical studies* applied to the interpretation of the structure and reactivity, and search for the reaction mechanisms of coordination compounds.

For the purpose, various *techniques* and *methods* (with the acquisition of the corresponding required *instrumentation*) have been brought in the research Centre (CQE) by himself and his Group, namely for:

- *catalysis under **un**conventional conditions*, such as, metal-free, solvent-free, microwave assisted, in supercritical fluids or in ionic liquids;
- *high pressure gas reactions and catalysis* (since 1999, with the cooperation of Prof. A. Palavra);
- *conventional molecular electrochemistry* (since 1980, *e.g*. cyclic voltammetry, controlled potential electrolysis and, more recently, electrocatalysis);
- ***un**conventional* molecular *electrochemistry* (since 1990, including the use of *ultramicroelectrodes* in fast voltammetry, the development and use of *digital simulation* methods in cyclic voltammetry and their application to mechanistic studies of electrode processes involving fast reactions induced by electron-transfer, in electrocatalysis, etc.);
- *stopped-flow spectrophotometry* (since 1990, applied to the kinetic investigation of fast reactions, *e.g*. protonations, in Coordination Chemistry);
- *mass spectrometry* (including fast atom bombardment, FAB-MS) and its coupling to gas-chromatography (GC-MS) (since 1990, applied to the identification of compounds, *e.g*. reaction products, and to the induction and monitoring of reactions in FAB conditions);
- *thermogravimetry* (since 2009);
- *microwave* promoted synthesis (since 2001);
- *catalysis in supercritical fluid* (since 2007, with the cooperation of Prof. A. Palavra).
- *surface and porosity analysis* of solids (since 2018 at the "Complexo" site of CQE);
- The application of *digital simulation* to the *analysis of NMR spectra* as well as the extension of NMR spectrometry to various then less-common nuclei have also been introduced (since 1991 and 1997, respectively) into his research Centre by his Group.

Scientific Specialities

- Coordination chemistry of small molecules.
- Catalysis.
- Metal-mediated synthesis of organic compounds.
- Transition metal and organometallic chemistries in aqueous media.
- High pressure gas reactions.
- Reactions in supercritical fluid medium.
- Microwave assisted reactions.
- Non-covalent interactions in synthesis.
- Self-assembly of polynuclear and supramolecular structures.
- Crystal structure design and growth (crystal engineering).
- Complexes with multiple metal-carbon bonds.

- Electrochemistry of complexes.
- Mechanisms of reactions.
- Multinuclear NMR spectrometry.
- Mass spectrometry.

SELECTED ACHIEVEMENTS

Selected scientific achievements (by him and his Group) are illustrated and briefly summarized (2 pages) as follows, within main research lines.

- **Catalysis** towards sustainability

Alkane Functionalization under mild conditions for the single-pot syntheses of added value organic compounds (*e.g.*, alcohols, ketones, carboxylic acids, esters or organo-halides).
Ex1: The most active catalytic systems for oxidative carboxylation of alkanes (including methane and ethane) to carboxylic acids were developed. They are based on *Amavadin* (a natural non-oxido vanadium complex present in amanita toadstools) and its models. The solvent trifluoroacetic acid (TFA) behaves as the carbonylating agent, apart from CO, and new types of radical mechanisms were disclosed. Much simpler and sustainable process for carboxylic acids than the industrial ones.
Ex2: The first alkane hydrocarboxylation system (water as the hydroxylating agent) was achieved. It is a development of the above system, operating in water-acetonitrile medium instead of TFA, at ambient temperature. Works under metal-free conditions, but with improved performance by suitable metal catalysts. Replacement of acetonitrile by an ionic liquid shows advantages towards sustainability.
Ex3: The first multi-copper catalysts, inspired on particulate methane monooxygenase (pMMO), for the peroxidative oxidation of alkanes to alcohols and ketones. Operate in partially aqueous medium. Water soluble heterometallic complexes and MOFs based on Cu, Fe and other metals as highly active catalysts under mild conditions with aqueous H_2O_2 as oxidant.
Ex4: Non-transition metal catalytic systems for alkane oxidations with aqueous H_2O_2. Theoretical studies applied to predict reactivity to diverse metals(III) of groups 13 and 15 (also of related group 3), subsequently proved by experimental studies. Novel types of mechanisms based on such metals, where the metal oxidation state is preserved and the hydroperoxide ligand is redox active (metal-ligand cooperation).
Ex5: Direct partial oxidation (with ozone) of cyclohexane to adipic acid (material for Nylon) catalyzed by an Fe "scorpion" catalyst, in a solvent-free, radiation-free, heating-free, N_2O-free (HNO_3-free) process, much simpler and much more sustainable than the industrial processes.
Ex6: Catalysis under unconventional conditions, namely in ionic liquids, supercritical CO_2, assisted by microwaves.
Ex7: (Direct) self-assembly synthesis of mono- and multinuclear homo- and heterometallic complexes and coordination polymers (MOFs) as catalysts for the above alkane peroxidative oxidation and hydrocarboxylation in partially aqueous media, as well as for other types of catalytic reactions, *e.g.*, Bayer-Villiger oxidation of ketones and Henry (nitroaldol) C-C couplings in water.
Ex8: Synthesis of water soluble complexes (with hydrosolule scorpionates, amino-polyalcohols, benzene-polycarboxylates, N-hydroxyiminodicarboxylates, azo derivatives of

β-diketones, etc) and their application in catalysis in aqueous media, namely in alkane functionalization.

Water Oxidation *to dioxygen*: The first water oxidation catalytic system based on a molecular catalyst of an early transition metal (up to group 7), also the first one based on a metallobiomolecule (*Amavadin*), which, moreover, operates in the dark, with Ce(IV) as oxidant. A novel type of mechanism based on a single metal and on a metal-ligand cooperation was disclosed, taking advantage of the redox activity of the ligand oxyiminate moiety.

- **Metal-mediated Synthesis**

Of a variety of organo-nitrogen compounds (*e.g*., oxadiazolines, oxadiazoles, carboxamides, acetylamides, imidoylamidines, iminoisoindolinones, phthalimides, phthalocyanines, cyano-olefins or tetrazoles), based on the activation, by "electron-poor" metal centres, of organonitriles towards [2+3]-cycloaddition reactions and nucleoplilic attack by a variety of nucleophiles, namely oximes, nitrones and related ones. Mechanisms established by theoretical studies.
Ex1: An unprecedented and convenient route to phthalocyanines and their complexes based on double addition of oximes to phthalonitriles.
Ex2: Nitrile hydrolysis to carboxamides with a Zn/oxime system under mild conditions, by cooperative metal- and organo-catalysis involving metal-based and oxime-based catalytic cycles.

- **Non-covalent Chemistry in Synthesis**

Including reactions promoted by Resonance Assisted Hydrogen-bond (RAHB), π-π interactions, tetrel interactions, *e.g*., *E/Z* isomerizations, activation to nucleophilic attack, liberation of ligands and aldehydes cyanosilylation, in arylhydrazone copper or cobalt complexes.

- **Molecular Electrochemistry**

Towards establishment of redox potential-structure relationships, applications in electrosynthesis, electrocatalysis and in the induction of chemical reactivity by electron-transfer (ET). Mechanisms were established by digital simulation of fast cyclic voltammetry.
Ex1: Extension to a diversity of types of metal centres and ligands (*e.g*., to half-sandwich benzene and scorpionate complexes) of redox potential-structure relationship models of Lever and Pickett.
Ex2: The first electrocatalytic system with a Michaelis-Menten type mechanism. *Amavadin* acts as an ET-mediator in the electrocatalytic oxidation of thiols in water, behaving as an enzyme.
Ex3: ET chain catalytic isomerisation of Re-carbonyl phosphinic complex.
Ex4: ET-induced isomerization of cyanoimido and nitrile Re phosphinic complexes, and ligand effects (single and double square type ECEC mechanisms, where C and E are electrochemical and chemical steps, respectively).
Ex5: ET-induced proton transfer reactions in hydride-Fe and aminocarbyne-Re phosphinic complexes (square type ECEC mechanisms).

- **Theoretical Studies**

Applied to interpretation and establishment of mechanisms of some of the above reactions, including the alkane functionalizations, namely to understand the promoting role of water as a catalyst for proton-transfer steps, as an amphoteric reagent and as a TS stabilizer, to design catalysts and predict catalytic behaviours (for examples, see above).

• **Activation of small unsaturated molecules** (such as, isocyanides, nitriles, cyanamides, alkynes, phosphaalkynes, nitric oxide) **by "electron-rich"** phosphinic transition metal centres (of Re, Mo, W and Fe), namely to electrophilic attack. Unprecedented routes to multiple metal-carbon (aminocarbynes, phosphidocarbenes), multiple metal-nitrogen (azavinylidenes) and metal-phosphorus (*e.g.*, phosphinidene oxide) bonds were achieved.

PROJECTS (under his responsibility or coordination)

(*FCT – Foundation for Science and Technology. ICCTI – Institute for the International Scientific and Tecnological Cooperation.JNICT - National Board for Scientific and Technological Research.CNR - National Research Council (Italy).CNRS - National Centre for Scientific and Technological Research (France). HMC - Human Capital and Mobility programme. POCTI – Operational Programme on Science, Technology and Innovation.PEDIP – Specific Programme for the Development of the Portuguese Industry*).

- "Catalytic Alkane Functionalization towards Sustainable Organic Synthesis" (CAFSOS), (Project PTDC/QEQ-QIN/3967/2014, FCT) (2016-2020) (199 k€).
- "Catalysis and Sustainability" (FCT PhD Programme, 24 PhD fellowships) (Programme Director) (ongoing since Jan., 2014) (1.209 million €).
- Centro de Química Estrutural research project (UID/QUI/00100/2013) as Coordinator of this Centre (4.4 million €, 2015-2018, FCT).
- "Metal-mediated and Metal-catalyzed Conversions of Isocyanides", Russian Science Foundation Project (14-43-00017) for Creation and Development of International Groups (August 2014-2019) (Portuguese team leader. Coordinator: V.Yu Kukushkin).
- "Coordination Chemistry and Catalysis" (ongoing, former "Coordination Chemistry and Molecular Electrochemistry, Synthesis and Catalysis"), Group 1 (Centro de Química Estrutural), FCT(since 2015) (founder) (405 k€, 2015-17; *ca*. 270 k€, 2018-2019; *ca.* 79 k€, 2020).
- "Single-Pot Carboxylation of Alkanes under Mild Conditions", (Project PTDC/QUI-QUI/102150/2008, FCT) (2010-13) (143 k€).
- "GC-MS", [Programme PO 002 (Innovation and Scientific and Technological Research), MO 003 (Development of a Modern Network of R&D Institutions), Project 6811 (Consolidation of Scientific Re-equipment of S&T Institutions), sponsored by FCT, since 2010] (81.4 k€).
- "Coordination Chemistry and Molecular Electrochemistry, Synthesis and Catalysis", Group V (Centro de Química Estrutural), FCT (2008-14) (founder).
- "Catalytic Carboxylation of Alkanes" (Project POCI/QUI/58821/2004, sponsored by the POCI 2010 Programme, FCT, 2005-07; project PPCDT/QUI/58821/2004, 2008-09) (73 k€).
- "Chemical Synthesis and Catalysis" (Project CONC-REEQ/543/2001, National Programme for Re-Equipping Science) (2005-09) (Coordinator) (205.5 k€).

- “Direct Conversion of Methane into Carboxylic Acid” (Project supported by a technology transfer agreement with Jiangsu SOPO Corp., since 2005) (80,000 USD).
- “Transition Metal Chemistry and Catalysis in Aqueous Media” (AQUACHEM) [Project MRTN-CT-2003-503864, Human Resources and Mobility (HRM) Marie Curie Research Training Network (RTN)] (Portuguese team leader). Other participants: Prof. M. Peruzzini (Florence) (Coordinator), Prof. F. Joó (Debrecen, Hungary), Prof. O. Lev (Jerusalem), Prof. A. Lledós (Barcelone), Prof. J.-P. Majoral (Toulouse), Prof. R. Perutz (York), Prof. R. Poli (Dijon), Prof. A. Romerosa (Almería, Spain), Prof. E. Shubina (Moscow) and Prof. R. van Eldik (Erlangen, Germany) (2004-07) (budget for the Portuguese team: 184.9 k€).
- “Early-Late Multinuclear Metal Systems on Design and Development of New Materials” (NATO Collaborative Linkage Grant PST. CLG. 979289). Other participants: Prof. V. Yu. Kukushkin (St. Petersburg State University, Russia) and Prof. P. Sobota (Wroclaw University, Poland) (2003-06) (12 k€).
- “Metal-based Synthons with Pharmacological Significance” (Project POCTI/QUI/43415/2001, sponsored by the POCTI programme, FCT) (2002-05) (98.5 k€).
- “Coordination Chemistry and Molecular Electrochemistry”, Group V (Centro de Química Estrutural), FCT (2000-07) (founder).
- “Coordination and Reactivity of Organonitriles, Cyanamides and Derived Species” (sponsored jointly by ICCTI and the CNR, Italy). Co-responsibility: Prof. R.A. Michelin (University of Padova) (1999-2001).
- "Oxidation of Saturated Hydrocarbons" (Project PRAXIS/POCTI /2/2.1/QUI/193/94, sponsored by the PRAXIS XXI and the POCTI Programmes) (1998-2002).
- “The Chemistry of Platinum Group Metals with N-Donor Ligands: Structure-Reactivity and Structure-Biological Activity Relationships”. Co-responsibility: Prof. V.Yu Kukushkin (St. Petersburg State University, Russia) (since 1998).
- "Activation of Phosphaalkynes by Transition-Metal Centres" (sponsored by the CRUP / The British Council, Treaty of Windsor programme). Co-responsibility: Prof. J. Nixon (University of Sussex) (1997-99).
- "Chemical and Electrochemical Investigation of Some Transition Metal-Promoted Reactions of Alkynes, Diazoalkanes, Cyanamide and Derived Species" [sponsored jointly by ICCTI (JNICT) and the CNR, Italy]. Co-responsibility: Prof. R.A. Michelin (University of Padova) (1997-98).
- ”Activation of Small Molecules", FCT / JNICT (1996-99).
- "Molecular Electrochemistry of Coordination Compounds", FCT / JNICT (1996-99).
- "Chemistry and Redox Properties of Palladium or Platinum Complexes with Multiple Bonded C,N-Donor Ligands" (sponsored jointly by JNICT and the CNR, Italy). Co-responsibility: Prof. R.A. Michelin (University of Padova) (1995-96).
- "Multiple Metal-Carbon Bond Species in Selective Processes" (Project ERBCHRXCT940501, Human Capital and Mobility EC Network) (participant in charge of the Portuguese team). Other participants: Prof. S. Maiorana (Milan) (Coordinator), Prof. P.H. Dixneuf (Rennes), Prof. K.H. Dötz (Bonn), Dr. J.M. Moreto (Barcelona), Prof. S. Thomas (London) and Prof. J. Gimeno (Oviedo) (1994-97).

- “Development of Mimetic Systems of Fundamental Biological Processes with Environmental and Economical Relevance" (Project PRAXIS/2/2.1/QUI/03/94, sponsored by the PRAXIS XXI Programme for Scientific and Technological Research) (1994-99).
- "Electrochemistry of Transition Metal Complexes” [project sponsored by INIC (1985-1992) or JNICT (1993-95)] .
- "Activation of Unsaturated Small Molecules by Palladium or Platinum Metal Centres, a Chemical and Electrochemical Investigation" (project sponsored jointly by JNICT and the CNR, Italy). Co-responsibility: Dr. R.A. Michelin (University of Padova (1993-94).
- "Activation and Electrochemistry of Unsaturated Small Molecules of Biological or Industrial Significance – Nitric Oxide and Cyanamide" (Project STRDA/CEN/450/92, sponsored by the STRIDE Program, Measure A) (1992-95).
- "Mechanisms of the Activation of Metal-Ligand Bonds by Electrochemistry with Ultramicroelectrodes. Application to the Study of Model Reactions for the Activation of Small Molecules" (project sponsored jointly by INIC, JNICT and CNRS, France). Co-responsibility: Dr. C. Amatore (École Normale Superieure, Paris) (1992-96).
- "Chemistry and Electrochemistry of Low-Valent Palladium and Platinum Complexes with Unsaturated C-N Ligands" (project sponsored jointly by INIC, JNICT and the CNR, Italy). Co-responsibility: Dr. R.A. Michelin (University of Padova) (1991-92).
- "Synthesis and Mechanistic Studies in Bioinorganic Chemistry" [sponsored by the CIENCIA (Science) Program, Sub-program III - Global Support to the Scientific and Technological System, Infrastructures for Research and Development, Measure M] (1990-97) (Coordinator).
- "Molecular Electrochemistry of Coordination Compounds - Application of Ultramicroelectrodes" (Project PMCT/C/CEN/339/90, sponsored by JNICT) (1990-94).
- "Investigation of the Mechanisms of Proton Transfer Reactions, in Coordination Compounds, by Stopped Flow Spectrophotometry" [project sponsored by the ICCTI (JNICT)/The British Council protocol]. Co-responsibility: Dr. R. Henderson (Nitrogen Fixation Laboratory, Norwich (1990-97).
- "Chemistry and Electrochemistry of Coordination Compounds with Multiple Phosphorus-Carbon Bonds" (project sponsored by the CRUP/The British Council, Treaty of Windsor programme). Co-responsibility: Prof. J. Nixon (University of Sussex) (1989-92).
- "Low-Valent Transition Metal Carbene Complexes" (project sponsored jointly by INIC and the CNR, Italy). Co-responsibility: Dr. R.A. Michelin (University of Padova) (1989-90).
- "Chemical/Electrochemical Activation of Compounds with Unsaturated Triple Bonded Carbon" (project 87.47/QUI sponsored by JNICT under the Mobility Programme for S&T) (1988-90).
- "Application of Nitrogen Fixation Metal Sites in Homogeneous Catalysis. Reactions of Alkynes" [joint research programme ("acção integrada") with the Federal Republic of Germany sponsored by the CRUP and by the DAAD]. Co- responsibility: Prof. I. Ugi and Dr. R. Herrmann (University of Munich) (1987-89).
- "Coordination Chemistry of Dinitrogen and Related Molecules" [project sponsored by INIC (1985-1992) or JNICT (1993-95)] .

- "Studies on the Chemical and Electrochemical Properties of Small Molecules Activated by Nitrogen Fixation Metal Sites" (project no. 216.80.56 sponsored by JNICT, 1980-83).
- "The Preparation, Properties and Chemical Reactions of Isocyanide, Carbene and Carbyne Complexes of the Early Transition Metals" (project sponsored by the NATO research grant no. 1604). Co-responsibility: Dr. R.L. Richards (Unit of Nitrogen Fixation, Univ. Sussex) (1978-81).
- "Isocyanide and Nitrogen Fixation" (project sponsored by INIC) (1976-1984).

TEACHING COURSES

(*Under his responsibility. †Under his co-responsibility)

UNDERGRADUATION

- "Chemistry Laboratories I", 2010-11 (1st cycle, integrated MSc, Chem.Eng., Biolog. Eng., IST).
- "Chemistry Laboratories II", 2010-11, 2013-14 (1st cycle, integrated MSc, Chem.Eng., Biolog. Eng., IST)
- "Organometallic Chemistry and Catalysis"*, 2007-2009 (Chemistry course, 1st cycle, 3rd year, IST).
- "Organometallic Chemistry"*, 2004-2007 (Chemistry course, 4th year, IST).
- "Inorganic Chemistry"*, 1999-2009 (Chemistry course, 3rd or 2nd year,IST).
- "General Chemistry Laboratories I", 1997-…* (Chemical Engineering, Chemistry and Biological Engineering courses, 1st year, IST).
- "Inorganic Chemistry I"*, 1995-99 (Chemical Engineering course, 2nd year, IST)
- "Laboratory I"*, 1994-97 (Chemical Engineering course, 1st year, IST).
- "Catalysis"†, 1990-94 (Chemical Engineering course, 4th year, IST).
- "Inorganic Chemistry II"* , 1986-99 (Chemical Engineering course, 3rd year, IST IST).
- "Inorganic Chemistry", 1976-83 (Chemical Engineering course, 1st year, IST.).
- "Laboratories"† or "Laboratory Research Projects"†, 1976-… (Chemical Eng. course, 4th and 5th years, IST).
- "Laboratory Techniques"*, 1976-93 (Chemical Engineering course, 1st year, IST).
- "Analytical Chemistry"*, 1971-73 (Chemical Engineering course, 2nd year, IST).

POST-GRADUATION

- Director of the PhD program on "Catalysis and Sustainability"(CATSUS), since its creation, 2014 (IST).
- "Homogeneous Catalysis"* (various topics) within the CATSUS PhD Program (IST), since 2014 until 2019.
- "Advanced Homogeneous Catalysis"*, 2015 and 2016 ("Molecular Chemistry, Science and Engineering" Master, *École Polytechnique*, Palaiseau, Paris, France.
- "Homogeneous Catalysis"*, from 2005 until 2015 (Multinational Master in Molecular Chemistry), 2003 and 2004 (DEA, Diplôme d'Etudes Approfondies, Multinational in Molecular Chemistry), *École Polytechnique*, Palaiseau, Paris, France.
- "Coordination Chemistry: Bonding, Structure, Reactivity", 26th Jyvaskyla Summer School, *University of Jyvaskyla*, August 2016, Finland (with M. F. C. Guedes da Silva).

- "Homogeneous Catalysis", 26th Jyvaskyla Summer School, *University of Jyvaskyla*, August 2016, Finland.
- "Homogeneous Catalysis"* and "Functionalization of Alkanes"*, 2009 and 2010 (Erasmus Intensive Programme (IP) on "Advanced Catalysis and Organometallic Chemistry", *University of Camerino*, Italy) (IST partner institution coordinator).
- "Homogeneous Catalysis: Topics of Industrial Significance"* and "Functionalization of Alkanes" *, 2012 and 2013, Lifelong Learning Programme, Erasmus Intensive Programme (IP) EUCHEME ("EUropean CHemists for Energy, Materials and Environment"), *University of Camerino*, Italy (IST partner institution coordinator).
- "Catalysis and Catalytic Processes", since 2007 until 2019 (M.Sc. courses on Chemistry and on Chemical Engineering, 2nd cycle, IST).
- "Advanced Strategies of Synthesis",† since 2010 until 2019 (3rd cycle, Chemistry, IST).
- "Specialization (Advanced) Laboratories I",†,* since 2007 until 2019 (M.Sc. course on Chemistry, 2nd cycle, IST).
- "Specialization (Advanced) Laboratories II",* 2008-2009 (M.Sc. course on Chemistry, 2nd cycle, IST).
- "Topics of Coordination Chemistry",* 2007 (*National Taiwan University of Science and Technology,* Taipei, Taiwan).
- "Molecular Electrochemistry, Electrocatalysis and Homogeneous Catalysis"*, 2008 (XXVIII Chemistry Summer School, *Federal University of S. Carlos*, Brazil).
- "Current Topics in Coordination Chemistry"* (course for Faculty members), within the themes of coordination chemistry of nitric oxide and related species, and of molecular electrochemistry of their complexes, Department of Chemistry, *University of La Laguna*, Tenerife, Spain, 1994.
- "Electrochemical Methods in Synthesis"*, 1991-92 (M. Sc. course on Chemical Engineering/Applied Chemistry, IST).
- "Coordination Compounds in Pharmacology"* [2 years research course within the Specific Programme for the Development of the Portuguese Industry (PEDIP programme), IST, 1991-93] .
- "Organometallic Chemistry"†, 1981-91 (M.Sc. courses on the Chemistry of Catalytic Processes and on Chemical Engineering/Applied Chemistry, IST).
- "Carbyne, Carbene and Isocyanide Complexes"* (M.Sc.course on Organometallic Chemistry, 1981/82, *University of Sussex*, U.K.).

RESEARCH TRAINING SUPERVISION AND MENTORING

- 28 Ph.D. and 19 M.Sc. theses (degrees awarded),
- *ca*. 60 Doctorates (mostly foreign Post-doc. Fellows, including 10 contracted Researchers within the DL 57/2016 and L 57/2017),
- *ca*. 75 Graduates or Undergraduates (mostly foreign Ph.D., Marie Curie, Erasmus, FCT, etc. grant holders).

PHD THESES

- "Síntese, Reactividade e Estudos Electroquímicos de Complexos Diazóticos e Isonitrílicos de Rénio", Maria Fernanda N.N. Carvalho, IST, 1987. Present professional position: Associate Professor at IST.
- "Reactions of Alkynes at Dinitrogen Binding Sites", Neimat K. Kashef, University of Sussex (U.K.), 1987 (co-supervision with Dr. R.L. Richards). Professional positions: at an

oil cpmpany (Saudi Petroleum Overseas, London) and at a private hospital (Bupa Cromwell Hospital, London).

- "Electroquímica e Química de Complexos Derivados da Activação de Alcinos, Fosfaalcinos e Isonitrilos", Maria Amélia N.D.A. Lemos, IST, 1993. Present professional position: Associate Professor at IST
- "Química e Electroquímica Molecular de Complexos Derivados da Activação de Nitrilos, Metilenoamidas e Diazoalcanos", Maria de Fátima C. Guedes da Silva, IST, 1993. Present professional position: Associate Professor (IST) following the same position at a private university (ULHT)
- "Activation of Nitric Oxide, Azide, Cyanate, Thiocyanate, Alkynes, Cyanamides, Isocyanides and Dihydrogen at Transition Metal Centres", Wang Yu, IST, 1994. Present professional position: Director (CEO) and co-founder of a private enterprise on advanced lithium-ion batteries (Farasis Energy, Inc.), USA and China.
- "Complexos Fosfínicos de Ferro ou Molibdénio com Ligandos Nitrilos, Cianamidas ou Relacionáveis", Luísa Margarida D.R.S. Martins, IST, 1996. Present professional position: Associate Professor (IST), following Adjunct Professor at a public polytechnique institute (ISEL).
- "Complexos Diazenetos de Rénio", Maria Teresa A. Ribeiro Sá da Costa, IST, 1996. Present professional position: teacher at a secondary level school
- "Compostos de Platina e Rénio com Ligandos Azotados e Sua Reactividade", Cristina M.P. Ferreira, IST, 2001. Following professional position: researcher at a public institute (Instituto Ricardo Jorge) (with Dr. M. F. C. Guedes da Silva).
- "Química de Coordenação de Alcinóis e Dinitrilos em Centros de Ferro(II)", Ana Isabel da Fonseca Venâncio, IST, 2003.
- "Funcionalização de Alcanos e Aromáticos por Catalisadores de Vanádio(IV) e (V)", Patícia Matias Reis, IST, 2003. Following professional positions: Researcher at a public University (Univertsidade Nova de Lisboa) and at a private company (Alfama).
- "Activation of Cyanamides and Dinitrogen by Molybdenum and Tungsten Phosphinic Centres", Sónia M.P.R.M. Cunha (submitted in 2004, IST, but not defended on account of the candidate's death on the same year) (with Dr. M. F. C. Guedes da Silva).
- "Azole-Based Ruthenium Anticancer Drugs - Synthesis, Electrochemical Behaviour and Antiproliferative Activity", Erwin Reisner, University of Vienna, 2005 (co-supervision with Profs. B.K. Keppler, V.B. Arion and V.Yu. Kukushkin). Present professional position: Full Professor, University of Cambridge, UK.
- "Estudos Mecanísticos de Electrocatálise de Redução de Halogenetos Orgânicos e de Oxidação de Álcoois, Tióis ou Polifenóis", Natércia C. Tomé Martins, IST, 2005 (with Dr. M. F. C. Guedes da Silva). Following professional position: Post-Doc researcher, University of Aveiro.
- "Química de Coordenação de Escorpionatos e Outros Ligandos Insaturados de Azoto em Centros de Rénio, Molibdénio ou Ferro", Elisabete C.B.A. Alegria, IST, 2006. Present professional position: Adjunct Professor at a public polytechnique institute (ISEL).
- "Rhenium, Copper and Other Transition Metal Complexes towards Catalytic Oxidative Functionalization of Alkanes under Mild Conditions", Alexander M. Kirillov, IST, 2006. Present professional position: Auxiliary Professor at a public university (IST).
- "Pt-mediated Coupling of Organonitriles with Simple and Bifunctional HO-nucleophiles: Synthetic and Structural Approaches", Konstantin V. Luzyanin, IST, 2007 (co-supervision with Prof. V.Yu. Kukushkin). Present professional position: Analytical Research Specialist, University of Liverpool.

- "Single-pot Transformation of Alkanes into Carboxylic Acids Catalyzed by Transition Metal Centres under Mild Conditions", Marina V. Kirillova, IST, 2007. Present professional position: Auxiliary Researcher at IST.
- "New copper(II) Coordination Compounds with N,O- and N,N-ligands, Their Application in Oxidation Catalysis and in Metal-mediated Synthesis of Triazapentadienes and Pyrimidines", Yauhen Karabach, IST, 2010. Following professional position: Post-Doc researcher at IST.
- "Nitrogen- and Oxygen-based Chelating Ligands: Tris(pyrazolyl)methane and Salicylamidate Ligands", Ricardo Wanke, IST, 2010.
- "Bioinspired Iron and Copper Catalyzed Oxidations and Reactions in Supercritical Carboon Dioxide", Ricardo J.R. Fernandes, IST, 2011. Present professional position: employee at a private enterprise (Luxembourg)
- "New Scorpionate Transition Metal Complexes and their Applications in Oxidation Catalytric Systems", Telma F. S. Silva, IST, 2012 (co-supervisor; supervisor: Dr. Luísa Martins). Following professional positions: technician at a public polytechnique institute (ISEL), employee at public institutions (Portuguses Institute for Quality and Portuguese Environment Agency)
- "Efficient and Straighforward Appropaches to New Types of Chiral and Achiral Metalla-aminocarbene Complexes", Tatiana Anisimova, IST, 2016 (co-supervisor: Dr. Konstantin Luzyanin). Folowing professional position: employee at the industrial sector (Russia)
- "Design and Properties of Functional Silver(I) Coordination Networks Driven by 1,3,5-Triaza-7-Phosphaadamantrane and Its Derivatives", Sabina Wieczorek, IST, 2016 (co-supervisors: Dr. A. Kirillov and Dr. Piotr Smolenskii). Present professional position: Auxiliary Professor (Univ Wroclaw)
- "Transcriptome and Proteome Profiling of Canine Mammary Tumors: Dog as a Genetic Model for Unrevealing Mammary Cancer Molecular Signatures", Luís M.R. Raposo (FCT grant holder), UNL, 2016 (co-supervisor; supervisor: Dr. M. Alexandra N.C.R. Fernandes). Following professional position: Researcher at a public University (Universidade Nova de Lisboa)
- "Development of an Integrated Green Chemistry Approach to Natural Plant Processing", Sergiy Lyubchyk (Trans-European Mobility Project on Education for Sustainable Development (TEMPO), Erasmus Mundus Program of the European Union), IST, 2017 (co-supervisor; supervisor: Dr. A. Charmier). Following professional position: Researcher at a public University (Universidade Nova de Lisboa)
- "Catalytic Alkane and Alcohol Oxidation under Mild Conditions", Nuno M.R. Martins, IST, June 2018 (CATSUS PhD program) (co-supervisors: Prof. L.M.D.R.S. Martins, Dr. K. Mahmudov). Following professional position: laboratory manager and R&D process engineer in the industrial sector (Solvay Portugal).
- "Activation of Carbon-Hydrogen Bonds and Formation of Carbon Bonds catalyzed by Metal Centres", Bruno G.M. Rocha, IST, October 2018 (CATSUS PhD program) (supervisor: Prof. M.F.C. Guedes da Silva; co-supervisors: Prof. A.J.L. Pombeiro, Prof. L.M.D.R.S. Martins). Following professional position: Researcher (CQE)
- "Development of Homogeneous Catalytic Systems in Aqueous Medium", Abdallah Gamal Abdallah Mahmoud, IST, January 2019 (CATSUS PhD program) (supervisor: Prof. M.F.C. Guedes da Silva; co-supervisors: Prof. A.J.L. Pombeiro, Dr. M.J.F. Calvete). Following professional positions: Researcher (CQE), Assistant Professor (Helwan University, Faculty of Sciences, Cairo, Egypt).
- Nuno R. Conceição (CATSUS PhD program; co-supervisors: Prof. M.F.C. Guedes da Silva, Dr. Kamran Mahmudov), *under way.*

- Ismayil Garazade (CATSUS PhD program; co-supervisors: Prof. A.J.L. Pombeiro, Dr. Ana V.N. Nunes; supervisor: Dr. Kamram Mahmudov), (PhD grant awarded by the "State Program for increasing the international competitiveness of the higher education system in the Republic of Azerbaijan for the years 2019-2023"), *under way.*

- Vusala Aliyeva (co-supervisor; supervisor: Dr. Kamram Mahmudov), *under way.*

MSc Theses

- "Some Reactions of Hydrido-Complexes of Molybdenum and Tungsten", Neimat K. Kashef, Universidade de Sussex (U.K.), 1982 (co-supersion with Dr. R.L. Richards).
- "Síntese e Estudo Electroquímico de Complexos Isonitrílicos e de Diazoto, de Ferro(II)", Maria Amélia N.D.A. Lemos, IST, 1985.
- "Estudo Electroquímico das Propriedades Redox de Ferrocenos Substituídos e Redução Electrocatalítica de Halogenetos Orgânicos por Complexos de Molibdénio, trans-[MoX2(dppe)2] (X=Br,I)", Maria Emília N.P.R.A. Silva, IST, 1985.
- "Activação Química e Electroquímica de Nitrilos ou Isonitrilos por Centros Metálicos de Molibdénio-Enxofre e de Ferro-Fosfina", Sílvia S.P. Almeida, IST, 1986.
- "Estudo Químico e Electroquímico da Reactividade de Nitrilos em Centros Fosfínicos de Molibdénio", Maria de Fátima D.S. Borrego, IST, 1989.
- "Síntese e Electroquímica de Complexos Nitrílicos de Rénio(I)", M. Fátima C. Guedes da Silva, IST, 1989.
- "Estudo Electroquímico de Compostos de Paládio(II) ou Platina(II) e de Derivados do Ferroceno", Tânia Jacometo de Castilho, IST, 1990. Upon returning to Brazil, she got a position at the Universidade Estadual de Campinas (Instituto de Química).
- "Electroquímica de Complexos com Ligandos de Azoto Insaturado", Isabel Luísa Ferreira Machado, IST, 1994 (with Dr. M.F.C. Guedes da Silva).
- "Complexos de Platina ou Paládio: Reacções com Compostos Diazo e Comportamento Electroquímico de Complexos de Cianamidas", Maria Estela Silva Dória, IST, 1995 (with Dr. M. F. C. Guedes da Silva).
- "Synthesis and Characterisation of Potential Tumour-Inhibiting Ruthenium Azole-Based Complexes", Erwin Reisner, University of Vienna, 2002 (co-supervision with Profs. B.K. Keppler, V. Arion and V. Yu. Kukushkin).
- "Complexos de Rénio com Ligandos Solúveis em Água. Aplicação em Catálise", Gonçalo José de Oliveira Correia Lopes, ISEL, 2008 (co-supervision; supervision by Dr. L.M.D.R.S. Martins)
- "Synthesis of Copper(II) and Nickel(II) Coordination Compounds with N,O ligands", Rui P. R. Carvalho, IST, 2010 (co-supervisor: Y. Y. Karabach).
- "Synthesis, characterization and catalytic properties of new scorpionate complexes", Bruno G. M. Rocha, IST, 2010.
- "Synthesis and Characterization of Metal Complexes of Arylhydrazones of Barbituric Acid", Marco Glucini, Dual Master, IST/University of Camerino, 2012 (other supervisors: Fabio Marchetti, Claudio Pettinari; co-supervisor: Kamran Mahmudov).
- "Synthesis of Palladium aminocarbene complexes and their application as catalysts in Suzuki-Miyaura cross-coupling reaction", Rogério Chay, IST, 2012 (co-supervision; supervision by Dr. K. Luzyanin)

- "Electrochemical Characterization of $K_3[Mn(CN)_6]$ and Related Matallates", Marco Renzi, Dual Master, IST/University of Camerino, 2013 (co-supervisor; supervisor: Prof. Silvia Zamponi; other co-supervisor: Prof. Mario Berrettoni).
- "Sulfo-functionalized Arylhydrazones of Active Methylene Compounds as Promising Ligands for Inorganic Synthesis", Alice Ribera, Dual Master, IST/University of Camerino, 2014 (co-supervision; supervisors: Dr. Kamran Mahmudov, Prof. F. Marchetti; another co-supervisor: Prof. C. Pettinari).
- "Structural, Thermophysical, Electrochemical and Catalytic Properties of Ionic Liquids with Iron Complexes", Robbe Vervecken, University of Antwerp / IST, 2015 (co-supervisor; supervisor: Prof. Luísa Martins).
- "Application of green techniques to cyclohexene and cyclohexane oxidation catalyzed by HC(pz)3-iron complexes and molybdenum-based complexes", Elisa Spada, University of Padova, Italy, 2015 (supervisors: A.J.L. Pombeiro, R. Bertani, A. Ribeiro).

POST-DOCS AND EMPLOYED RESEARCHERS (LONG TERM PERIODS)

- Dr. Rudolf Herrmann (Univ.Munchen), NATO grant holder, 1981-82 (1 year), andresearch grant holderfrom EC (Human Capital and Mobility programme), 1997-98 (6 months).
- Prof. George Kalatzis (Univ.Athens, sabatic license),1993-94 (*ca*. 1 year).
- Dr. Maria de Fátima C. Guedes da Silva (JNICT and PRAXIS XXI grant holder, 1993-96; Associate Professor of ULHT, 1996-2014 (research member at CQE). Present position: Associate Professor at IST, since 2014.
- Dr. Wang Yu (PEDIP, STRIDE, etc.), 1994 (*ca*. 5 months). Present position: Co-founder and Director (CEO) of Farasis Energy Inc. (advanced Li-ion batteries company), USA and China, since 2002.
- Dr. Simon Rumble (Univ. Bath), Royal Society/Academy of Sciences of Lisbongrant holder (1994-95) (1 year).
- Dr. Annette Limberg (Max Planck Mülheim Institut), grant holder from EC (Human Capital and Mobility programme, "Multiple Metal-Carbon Bond Species in Selective Processes"), 1995 (1 year).
- Dr. Mohamed Meidine (Univ. Sussex), grant holder from EC (Human Capital and Mobility programme, "Multiple Metal-Carbon Bond Species in Selective Processes", 1996), andPos-Doc grant holder (PRAXIS XXI, 1997-98) (total of 2 years).
- Dr. Luísa M.D.R.S. Martins, since 1996 (research member at CQE). Present position: Associate Professor (IST) since 2018, following Adjunct Professor at the public polytechnique institute ISEL.
- Dr. Gabriele Sabine Wagner (Univ. Munchen), Pos-Doc grant holder (PRAXIS XXI), 1997-2000 (3 years).
- Dr. Lei Zhang, Pos-Doc grant holder (PRAXIS XXI), 1998 (1 year).
- Dr. Ji-Quan Wang, Pos-Doc grant holder (PRAXIS XXI), 1998 (*ca*. 7 months).
- Prof. Dmitrii A. Garnovskii (State Rostov Univ., Russian Federation), Pos-Doc grant holder (PRAXIS XXI), 1998-2004 (2 years).
- Dr. Maxim L. Kuznetsov (Pedagogical State Univ., Moscow), Pos-Doc grant holder (PRAXIS XXI), 1998-99 (6 months), 2000-2008; Coordinating Investigator, 2013-2018; researcher within DL 57/2016 and L 57/2017 since 2018.
- Dr. Maximilian Kopylovich (Bielorrussia State Technological Univ., Minsk), Pos-Doc grant holder (PRAXIS XXI), 1999-2008. Present position: Auxiliary Researcher (IST).
- Dr. De Gao (Hunan Univ., China), Pos-Doc grant holder (PRAXIS XXI), 1999-2000 (6 months).

- Prof. Qingshan Li (Shanxi Medical Univ., China), Pos-Doc grant holder (PRAXIS XXI), 2000-2001 (1 year).
- Dr Adília Charmier (Invited Full Prof., ULHT), 2001-present (research member at CQE).
- Prof. Stanislav Selivanov (S. Petersburg State Univ., Russian Federation), grant holderof the "Outreach" programme (NATO, INVOTAN / ICCTI Commission), 2002 (3 months).
- Dr. Nadejda Bokatch (S. Petersburg State Univ., Russian Federation), grant holder (POCTI programme), 2003-04; 2011 (1 month) and 2012 (1 month) (grant holder, "Exchange of Young Scientists" programme) (supervisor: Dr. K. Luzyanine).
- Dr. Mishra Gopal (Indian Technological Institute), grant holder (FCT), 2005-2008 (3 years).
- Dr. Parimala Sowmia Narayann (Madras Univ., India), grant holder (FCT), 2005-2006 (with Dr. M.F.C. Guedes da Silva) (18 months).
- Dr. Jamal Lasri (Jaume I Univ., Castellón, Spain), grant holder (FCT), 2005-2008 (with Dr. A. Charmier).
- Dr. Suman Mukhopadhyay (Indian Association for the Cultivation of Science, Jadavpur, India), grant holder (FCT), 2006-2010 (with Dr. M.F.C. Guedes Silva and Dr. A. Charmier).
- Dr. Zhen Ma (School of Chemistry and Chemical Engineering, Guangxi University, Nanning 530004; Fujian Institute of Research on the Structure of Matter, China), grant holder (FCT), 2006-2015 (with Dr. M.F.C. Guedes da Silva). Present professional position: Full Professor (University of Guangxi, China).
- Dr. Laurent Benisvy (Leiden Institute of Chemistry, Holanda), grant holder ("Experienced Researcher") from AQUACHEM, "Marie Curie Research Training Network", 2007 (10.5months). Present professional position: Senior Lecturer at Bar-Ilan University (Israel).
- Dr. Piotr Smolenski (Wroclaw Univ., Poland), grant holder (FCT), 2005-2008 (3 years). Present professional position: Associate Professor (Univ. Wroclaw)
- Dr. Malgorzata Gajewska (Universidade de Wroclaw, Polónia), grant holder (FCT), 2007-2010 (3 years) (with Dr. M.F.C. Guedes da Silva). Present professional position: researcher (Univ. Taiwan).
- Dr. Alexander M. Kirillov, grant holder (FCT), 2006-2008.
- Dr. Konstantin V. Luzyanin, grant holder (FCT), 2007-2009.
- Dr. Tatiana Mac Leod (S. Paulo Univ., Brazil), researcher (3 months, 2008), grant holder (2 months, 2008-09, project PPCT/QUI/58821/2004) and FCT, (2009-2012). Present professional position: Adjunct Professor (Universidade Federal de Alfenas, Instituto de Ciência e Tecnologia, Brazil).
- Dr. Pawel Figiel (Wroclaw Univ., Poland), grant holder (FCT), 2008-2010 (26 months).
- Dr. Grzegorz Gajewski, grant holder (2 months, 2009, project PPCT/QUI/58821/2004).
- Dr. Xianmei Shang (Tongji School of Pharmacy, Huazhong University of Science and Technology,China), grant holder (FCT), 16 months, May 2009 – August 2010 (with Dr. M.F.C. Guedes da Silva).
- Dr. Kamran Mahmudov (Baku State Univ., Azerbaijan), grant holder (FCT), since Jan 2009; researcher within DL 57/2016 and L 57/2017 since 2018.
- Dr. Dmytro Nesterov (Taras Shevchenko National Univ., Kiev, Ucrania), grant holder (FCT), since Feb 2009; researcher within DL 57/2016 and L 57/2017 since 2018.
- Dr. Oksana Nesterova (Taras Shevchenko National Univ., Kiev, Ucrania), grant holder (FCT) since Oct. 2010; researcher within DL 57/2016 and L 57/2017 since 2018.
- Dr. Archana Mizar (Northeastern Hill Univ., Shillong, India), grant holder (FCT), April 2010 – May 2013.

- Dr. Sanghamitra Mukherjee (Jadavpur Univ.,India), grant holder (FCT), Dec. 2010 – 2013.
- Dr. Samik Gupta (Calcuta Univ., India), grant holder (FCT), Feb. 2011 – end 2012.
- Dr. Manas Sutradhar, Oct. 2011-present (project PTDC/QUI-QUI/102150/2008); researcher within DL 57/2016 and L 57/2017, since 2018.
- Dr. Swapan Das, grant holder (FCT), Sept. 2011- Aug. 2012 (1 year).
- Dr. Kuntal Pal, grant holder (FCT), 2012 (7 months).
- Dr. Anirban Karmakar (Chalmers University of Technology, Gotemburgo, Sweden), grant holder (FCT) since July 2012; researcher within DL 57/2016 and L 57/2017 since 2018.
- Dr. Susanta Hazra (Calcuta Univ., India), Grant holder (FCT) since Aug. 2012; researcher within DL 57/2016 and L 57/2017 since 2018.
- Dr. Anbu Sellamuthu (Indian Institute of Science, Bangalore, Karnataka), grant holder (FCT), Sept. 2012-present
- Dr. Ivan Eliseev (Prof. Auxiliar, S.Petersburgo State Univ.), 2012 (1 month) (supervisor: Dr. K. Luzyanine).
- Dr. Eduard E. Karslyan (A.N. Nesmeyanov Institute of Organoelement Compounds, INEOS, Moscow, Russian Federation), grant holder (project PTDC/QUI-QUI/102150/2008), June - Novembre 2012 (6 months)
- Dr. Mikhail Vinogradov (A.N. Nesmeyanov Institute of Organoelement Compounds, INEOS, Moscow, Russian Federation), grant holder (project PTDC/QUI-QUI/102150/2008), Jan.- June 2013 (6 months)
- Dr. Agnieszka Krogul (Univ. Warsaw), grant holder (project "The Modern University", co-financed by the European Social Fund under the Human Capital Operational Programme), May-June 2013 (2 weeks), June- September 2015 (4 months).
- Dr. Ana Paula Ribeiro, grant holder (FCT) since June 1, 2013; researcher within DL 57/2016 and L 57/2017 since 2018.
- Dr. Anup Paul, grant holder (FCT) since Dec 15, 2013 (with Dr. M.F.C. Guedes da Silva); researcher within DL 57/2016 and L 57/2017 since 2018.
- Dr. Atash Gurbanov, Baku State University, Azerbaijan, July 1- Sept 30, 2014 (3 months), December 2015-16 (6 months, Erasmus Mundus programme; 4 months, research grant), grant holder since April 1, 2017 (supervisor: Dr. Kamran Mahmudov); researcher within DL 57/2016 and L 57/2017 since 2018.
- Dr. Ravan Rahimov, Baku State University, Azerbaijan, August1st - September ^{1st,} 2014 (1 month) (superisor: Dr. Kamran Mahmudov).
- Dr. Luís Frija, grant holder (FCT) since Febr. 2015 (coordinator: Dr. M. Kopylovich); researcher within DL 57/2016 and L 57/2017 since 2018.
- Dr. Manoj Trivedi, University of Delhi, September - October 2015 (EXPERTS4Asia Consortium Grant) (Exchange Promoting Quality Education, Research and Training in South and South-East Asia).
- Dr. Ali Javid Sabaghian (Assistant Professor of Organic Chemistry, Department of Chemistry, Ahvaz Branch, Islamic Azad University, Ahvaz, Iran), February - July 2016 (coordinator: Dr. Luísa Martins).
- Dr. Ana Maria Faísca Phillips, since February 2016.
- Dr. Tannistha Roy Barman, grant holder (CQE), April 2016 - October 2022 (with Dr. Manas Sutradhar).
- Dr. Marta Andrade, grant holder (CQE), June 2017 - December 2021 (with Dr. Luísa Martins and Dr. M. Fátima C. Guedes da Silva).
- Dr. Aleksandr Saifutdinov (Assistant, Kazan National Research Technological University (KNRTU), Kazan, Russia), Sept 1 - Nov 30, 2017 (3 months) (superisor: Dr. Kamran Mahmudov).

- Dr. Sónia Carabineiro, Dec 2018 - June 2020 (former Principal Researcher at the Faculty of Engineering of the University of Porto; currently Assistant Professor at the Universidade Nova de Lisboa, NOVA, since 2020).
- Dr. Abdallah Gamal Abdallah Mahmoud, Feb 2019 - Feb 2020 (with Prof. M.F.C. Guedes da Silva) (currently Assistant Professor at the Helwan University, Faculty of Sciences, Cairo, Egypt). Post-Doc researcher (CQE) since November 2021.
- Dr. Martin Prechtl, since Jan 2021 for 2 years (Heisenberg-Fellowship, DFG), from the Universities of Cologne (Germany, researcher) and Roskilde (Denmark, teaching).
- Dr. Brij Mohan (former Post-Doc Research Associate at Jimai University, Xiamen, China), since October 2022.

FOREIGN STUDENTS WITHIN ERASMUS/SOCRATES OR MARIE CURIE RESEARCH TRAINING AND MOBILITY PROGRAMS, AND VARIOUS PROJECTS

- Katarzyna Sztajnowska (Wroclaw Univ., Poland), 1999 (2 months) (Erasmus grant holder).
- Iwona Osinska(Wroclaw Univ., Poland), 1999 (3 months) (Erasmus grant holder).
- Silvia Mazzega Sbovata (Padova Univ., Italy), 2000 (5 months) (Erasmus grant holder), 2004-05 (7 months) (PhD. student, Padova Univ.) ("Early Stage Researcher", AQUACHEM, "Marie Curie Research Training Network" grant holder).
- Lic. Nadejda Bokatch (S. Petersburg State Univ., Russian Federation), 2000 (3 months), 2001 (9 months), 2002 (5 months) (CQE grant holder).
- Lic. Pawel Figiel (Wroclaw Univ., Poland), 2000 (2 months) (Erasmus grant holder)
- Konstantin V. Luzyanin (S. Petersburg State Univ., Russian Federation), 2001 (3 months), 2002 (5 months) grant holder, CQE.
- Lic. Erwin Reisner (MSc student, Univ. Viena), 2002 (4 months).
- Marcin Niznik (Univ. Wroclaw, Poland), 2002-03 (5 months) (Socrates grant holder).
- Lic. Marina Kirillova (Bielorrussia Technological State Univ.), 2002-03 (9 months) grant holder, CQE.
- Anatoli Khripoun (S. Petersburg State Univ., Russian Federation), 2002 (3 months), 2004 (5 months) grant holder, CQE.
- Lic. Enmanuel B. Ramos (PhD student, Univ. of Valladolid, Spain), 2003 (3 months).
- Lic. Michal Kobylka (PhD student, Univ. Wroclaw, Poland), 2004 (1 month) (NATO grant holder).
- Lic[a] Ekaterina Tronova (S. Petersburg State Univ., Russian Federation), 2004-05 (8 months) (project POCTI/QUI/43415/2001).
- Lic. Jenia Karabach (Bielorrussia Technological State Univ.), 2005 (6 + 3.5 months) ("Early Stage Researcher" grant holder, projects AQUACHEM, "Marie Curie Research Training Network", and POCTI/QUI/43415/2001).
- Julia A. Golenetskaya (S. Petersburg State Univ., Russian Federation), 2005 (3.5 months).
- Lic. Paolo Sgarbossa (PhD student, Univ. Padova, Italy), 2006 (5 months) ("Early Stage Researcher" grant holder, project AQUACHEM, "Marie Curie Research Training Network").
- Paul Servin (PhD student, Univ. Toulouse, France), 2006 (1 month) ("Early Stage Researcher" grant holder, project AQUACHEM, "Marie Curie Research Training Network").
- Lic. Katrin Grunwald (Univ. Viena), 2006-07 (6 months) ("Early Stage Researcher" grant holder project AQUACHEM, "Marie Curie Research Training Network").
- Lic. Riccardo Wanke (Univ. Milan), 2007 (6 months) ("Early Stage Researcher" grant holder, project AQUACHEM, "Marie Curie Research Training Network").

- Lukasz Jaremko (Univ. Wroclaw, Poland), 2006 (4 months) (Erasmus).
- Monika Waredna (Univ. Wroclaw, Polónia), 2006 (4 months) (Erasmus).
- Lic. Chiara Dinoi (PhD student, Univ. Toulouse, France), 2007 (7.5 months) ("Early Stage Researcher" grant holder, project AQUACHEM, "Marie Curie Research Training Network").
- Virginia Valderrey Berciano (Univ. Valladolid, Spain), 2007 (6 months) (Erasmus).
- Pavel Guschin (S. Petersburg State Univ., Russian Federation), 2007 (4 months) (CQE).
- Lic. Federica Garau (PhD student, Univ. Padova, Italy), 2007-08 (6 months) (Fundação Aldo Gini grant holder), 2009 (6 months)
- Lic. Tatiana MacLeoad (PhD student, Univ. São Paulo, Brazil), 2008 (1 month); (project PPCDT/QUI/58821/2004), 2008-09 (2 months).
- Lic. Adele Cherquetella (PhD student, Univ. Camerino, Italy), 2008 (6 months) (Erasmus).
- Alexander Tshovrebov (S. Petersburg State Univ., Russian Federation), 2008 (6 months) and 2009 (5 months) (initiation research grant holder, project PPCDT/QUI/58821/2004).
- Stefano Lancianesi (Univ. Camerino), 2008-09 (6 months) (Erasmus)
- Maria José Fernández Rodríguez (PhD student, Univ. Murcia), 2009 (3 months) (with Dr. J. Lasri).
- Elena Valishina (Moscow State University of Fine Chemical Technologies, Rússia), 2009-10 (6 months), CQE), 2012 (9 months) (with Dr. K. Luzyanine).
- Malgorzata Filipowicz (Univ. Wroclaw, Poland), 2010 (3 months) (Erasmus) (with Dr. A. Kirillov).
- Agnieszka Lis (Univ. Wroclaw, Poland), 2010 (3 months) (Erasmus).
- Sabina Wieczorek (Univ. Wroclaw, Poland), 2010-2011 (3 months) (with Dr. A. Kirillov).
- Mikhail Kinzhalov (S. Petersburg State Univ., Russian Federation), 2014 (1 month), 2011 (3 months) ("Exchange of Young Scientists" grant holder, from his Univ.), 2012 (7 months) (with Dr. K. Luzyanine).
- Carine Tuong (Univ.Pierre et Marie Curie, Paris), 2011 (1 month) ("Internship Program of French Students" grant holder from her Univ.) (supervisor: Dr. K. Luzyanine).
- Tetiana Anisimova (S. Petersburg State Univ., Russian Federation), 2011 (6 months) (project PTDC/QUI-QUI/098760/2008) (supervisor: Dr. K. Luzyanine).
- Raja Jlassi (Univ. Sfax, Tunisia), PhD student, 2011 (3 months) (Transnational Cooperation Agreement Portugal-Tunisia) (with Dr. Max Kopylovch, Dr. Kamran Mahmudov), 2015 (3 months) (with Dr. A.P. Ribeiro).
- Eva Faliszewska (Univ. Wroclaw, Poland), 2011 (3 months) (Erasmus) (with Dr. Max Kopylovch, Dr. Kamran Mahmudov).
- Karolina Ptak (Univ. Wroclaw, Poland), 2010 (3 months) (Erasmus) (with Dr. Max Kopylovch, Dr. Kamran Mahmudov).
- Andrei S. Kritchenkov (S. Petersburg State Univ., Russian Federation), 2012 (2 months) (with Dr. K. Luzyanine).
- Nikita V. Shvydkiy (Lomonosov Moscow State University), (project PTDC/QUI-QUI/102150/2008), June–Nov. 2012 (6 months)
- Anna Voronina (Lomonosov Moscow State University of Fine Chemical Technologies) (project PTDC/QUI-QUI/102150/2008), Jan.–June 2013 (6 months)
- Alexander Novikov (Moscow Pedagogical State University, 6 months, 2012) (with Dr. Maxim Kuznetsov)
- Felix Bacher (University of Vienna), (Project PTDC/EQU-EQU/122025/2010), March-Sept., 7 months, 2013 (with Dr. Luisa Martins).

- Jessica Palmucci(University of Camerino), PhD student (secondment), Oct. 2013 –May 2014 (6 months)(with Dr. K. Mahmudov).
- Alice Ribera (University of Camerino), MSc student (Dual Master, IST-Univ. Camerino),Jan. 2014 – June 2014 (6 months) (with Dr. K. Mahmudov).
- Aleksandra Zatajska (University of Wroclaw, Poland), PhD student (secondment)(Erasmus), May-July 2014, May-July 2015.
- Jiawei Wang (University of Madeira), MSc student, Sept. 2014-June 2015 (with Dr. Luisa Martins and Dr. João Rodrigues).
- Robbe Vervecken (University of Antwerp), MSc student, Febr.-June 2015 (with Dr. Luisa Martins).
- Elisa Spada (University of Padova) (Erasmus), MSc student, Febr.-August 2015 (with Dr. Ana P. Ribeiro).
- Emmanuele Fontolan (University of Padova)(Erasmus), MSc student, July-December 2015 (with Dr. Ana P. Ribeiro, Dr. Elisabete Alegria and Prof. Roberta Bertani).
- Mohamed Soliman, PhD student since Febr. 2016 (CATSUS PhD Program; supervisors: Dr. Elisabete Alegria, Dr. Ana Paula Ribeiro, Dr. Marta Saraiva).
- Jawei Wang, PhD student since Febr. 2016 (CATSUS PhD Program; supervisors: Dr. Luísa Martins, Dr. Ana Paula Ribeiro and Dr. Marta Saraiva).
- Eugenio Bellussi (University of Padova) (Erasmus), MSc student, March-June 2016(4 months) (with Dr. Dmitro Nesterov).
- Roberto Giacomantonio (University of Camerino) (Erasmus), MSc student, Febr.-August 2017 (with João Tomé, Ana Ribeiro and Corrado Bacchiocchi).
- Francesco Ferretti (University of Camerino) (Erasmus), MSc student, Febr.-August 2017 (with M.F.C. Guedes da Silva, Elisabete Alegria and Fabio Marchetti).
- Olena Bondarenko (Taras Shevchenko National University of Kyiv), grant holder (CQE), July-December 2017 (6 months); grant holder (FCT Alkane project), September 2018-March 2019 (6 months) (with Dr. Dmytro Nesterov and Dr. M.F.C. Guedes da Silva).
- Jiahe Li (Guangxi University), PhD student, Oct. 2017- Sept. 2018 (12 months, with Dr. Dmytro Nesterov).
- Ekaterina Pakrieva (Tomsk University), PhD grant holder from the Ministry of Education and Science of Russia, Nov. 2017-July 2018 (8 months, with Dr. Sónia Carabineiro).
- Mariia Kashina (Saint Petersburg State University), MSc student, grant holder (FCT Alkane project), September-December 2018 (3 months, with Dr. Kamran Mahmudov)
- Ibadulla Mahmudov (National Academy of Sciences of Azerbaijan, Academician A.M. Guliyev Institute of Chemistry of Additives), PhD student, October 2021 - April 2022 (6 months, with Dr. Kamran Mahmudov).
- Arianna Rutigliano (University of Milan), MSc student, February-July 2022 (6 months, with Dr. Kamran Mahmudov and Dr. Ana Nunes).
- Peixi Liu (Institute for Thermal Power Engineering, Zhejiang University, P.R. China) (PhD grant awarded by the Chinese Scholarship Council), since November 2022 for 12 months (with Dr. Elisabete Alegria).
- Noemi Pagliaricci (University of Camerino), PhD student, February-July 2023 (6 months, with Dr. Anirban Karmakar).

POST-GRADUATE STUDENTS WITHIN PEDIP COURSE

- Elsa M. Perrot Branco (with Dr. M. F. C. Guedes da Silva, 1991-93).
- Luciana M.G. Costa Branco (with Dr. M. F. N. N. Carvalho, 1991-93).
- Tong Yu-Ying (with Dr. M. F. C. Guedes da Silva, 1991-93).

OTHER GRANT HOLDERS (PORTUGUESE)

- Elisabete Clara Bastos (Instituto Superior de Engenharia de Lisboa, ISEL), 1997 (3 months) (PRODEP).
- Lic. Filipa Delgado Siopa, 2004 (6.5 months) (project POCTI/QUI/43415/2001).
- Michell Rosamonte (IST), 2008 (8 months) (grant holder, UTL / Santander Totta Prize), 2008-09 (12 months).
- Rui Carvalho (IST), 2008) (8 months) (grant holder, UTL / Santander Totta Prize), 2008, (3 months) (project PPCDT/QUI/58821/2004), 2009 (12 months) (CQE).
- Rogério Seong Chay, 2008-09 (12 months) (CQE).
- Bruno Gonçalo Martins Rocha, 2008-09 (12 months) (CQE).
- Raquel Oliveira, 2012 (1 month) (Univ. Minho).
- Filipa Teixeira, 2013-14 (12 months) (grant holder, FCT) (with Dr. M. Kuznetsov).
- Sara Dias (IST), Febr. 2014 - June 2015 (with Dr. Ana P. Ribeiro and Dr. Elisabete Alegria).
- Marta Mendes (ISEL), MSc student, Sept. 2014-June 2015 (with Dr. Elisabete Alegria and Dr. Ana P. Ribeiro)
- Guilherme Rúbio, grant holder (CQE), July 2016 – Sept. 2017 (with Dr. Anirban Karmakar).
- Tiago Duarte, PhD student, 2015-2020 (CATSUS PhD Program; supervisors: Dr. Luísa Martins and Dr. Ana Paula Carvalho).
- Daniela Fonte, Oct. 2016-Oct. 2017 (with Dr. Elisabete Alegria and Dr. João Tomé).
- Inês M.R. Santos (MSc student, IST), March-Sept. 2021, 6 months (with Dr. Anirban Karmakar).
- Pedro M.R. Santos (MSc student, IST), March-Sept. 2021, 6 months (with Dr. Anirban Karmakar).

FOREIGN INVITED SCIENTISTS (LONG TERM PERIODS)

- Prof. Vadim Kukushkin (St. Petersburg State Univ., Russian Federation, sabbatical leave), "Outreach" grant holder (NATO, INVOTAN/J.N.I.C.T. commission), 1995-96 (*ca*. 3 months), PRAXIS XXI and POCTI, 1999-present (several periods, overall *ca.* 3 years).
- Prof. Georgiy B. Spul´pin (Semenov Institute of Chemical Physics, Russian Academy of Sciences, Moscow), since 2006 (several periods, 1.5-2 months/year).
- Dr. Lidia Shul'pina (INEOS, Moscow), since 2007 (several periods, 1.5-2 months/year).

PUBLICATIONS

(*When appropriate, in sections I and II, the names of the senior authors to whom the correspondence should be addressed are denoted by an asterisk.*)

I - BOOKS, CONTRIBUTIONS IN BOOKS OR REVIEWS (usually invited ones)

I.1 A.J.L. Pombeiro, "Isonitrile and Derived Carbyne Complexes of Molybdenum and Tungsten", D. Phil. Thesis, University of Sussex, U.K., 1976 (227 pages).

I.2 A.J.L. Pombeiro, " Preparation, Structure, Bonding and Reactivity of Dinitrogen Complexes", Chapter 6, *in* "New Trends in the Chemistry of Nitrogen Fixation", J. Chatt, L.M. Câmara Pina and R.L. Richards (eds.), Academic Press, London, 1980, pp. 153-197; Academy of Sciences of Lisbon edition, 1980, Chapter VI, pp. 163-209; MIR Editions, 1983, Chapter 6, pp.164-213 (Russian translation).

I.3 A.J.L. Pombeiro, "Reactions of Ligands Analogous to Dinitrogen on Dinitrogen Binding Sites", Chapter 10, *in* "New Trends in the Chemistry of Nitrogen Fixation", J. Chatt, L.M. Câmara Pina and R.L. Richards (eds.), Academic Press, London, 1980, pp. 249-274; Academy of Sciences of Lisbon edition, 1980, Chapter X, pp.267-294; MIR Editions, 1983, Chapter 10, pp. 266-293 (Russian translation).

I.4 **Author of the book** "Techniques and Unit Operations in Laboratory Chemistry", (in Portuguese), University Series, Calouste Gulbenkian Foundation, Lisbon, 1983 (1st edition), 1991 (2nd edition), 1998 (3rd edition), 2003 (4th edition) (1070 pages).

I.5 A.J.L. Pombeiro, "Electrochemistry of Transition Metal Complexes", *Portugaliae Electrochimica Acta*, Academy of Sciences of Lisbon, 1983, *1*, 19-143.

I.6 A.J.L. Pombeiro, "Properties of Transition Metal Centres in Nitrogen Fixation", *Rev. Port. Quím.*, 1984, *26*, 30-60.

I.7 A.J.L. Pombeiro*, R.L. Richards, "Diisocyanide Complexes of Molybdenum(0) and Tungsten(0) and Derived Aminocarbyne Complexes", *Inorg. Synth.*, 1985, 23, 9-14.

I.8 A.J.L. Pombeiro, "Alkynes – Versatile Reagents in Coordination Chemistry, Synthesis and Chemical Industry" (in Portuguese), *Técnica*, 1987, no. 1. 87, 2-24.

I.9 A.J.L. Pombeiro, "Activation of Unsaturated C≡C and C≡N Bonds: Formation of Metal-Carbon Multiple Bonds", *in* "Coordination Chemistry and Catalysis", J.J. Ziólkowski (ed.), World Scientific Publishing Co., Singapore, 1988, pp. 100 -124.

I.10 A.J.L. Pombeiro* "Reactions of Alkynes at Mononuclear Electron-Rich Transition Metal Centres", *J. Organomet. Chem.*, 1988, *358*, 273-282 (25th anniversary celebratory issue). http://dx.doi.org/10.1016/0022-328X(88)87083-9

I.11 A.J.L. Pombeiro "Carbene Complexes Derived from the Activation of Isocyanidesand Alkynes by Electron-Rich Transition Metal Centres", *in* "Advances in Metal Carbene Chemistry" (NATO Advanced Research Workshop), U. Schubert (ed.), NATO ASI Series, Kluwer Academic Publishers, Springer, Dordrecht, The Netherlands, 1989, pp. 79-99. http://dx.doi.org/10.1007/978-94-009-2317-1_10

I.12 A.J.L. Pombeiro, "Electrophilic β-Addition to Isocyanide, Cyanide and Alkyne-Derived Ligands", *Polyhedron*, 1989, *8*, 1595-1600. http://dx.doi.org/10.1016/S0277-5387(00)80602-6

I.13 A.J.L. Pombeiro*, R.L. Richards, " *trans*-Bis[1,2-ethanediylbis(diphenyl-phosphine)]bis(isocyanomethane)tungsten(0)", *in* "Reagents for Transition Metal Complex and Organometallic Synthesis" R.J. Angelici (ed.), *Inorg. Synth*. 1990, *28*, 43-45.

I.14 A.J.L. Pombeiro*, R.L. Richards, "Reactions of Alkynes, Isocyanides and Cyanides at Dinitrogen-Binding Transition Metal Centres", *Coord. Chem. Rev.*, 1990, *104*, 13-38. http://dx.doi.org/10.1016/0010-8545(90)80039-V

I.15 **Coordinator of the book** "Cold Nuclear Fusion - Analysis and Perspectives" (in Portuguese), Academy of Sciences of Lisbon, 1991; and author of the following chapter therein: J.J.R. Fraústo da Silva, A.J.L. Pombeiro*, "Cold Nuclear Fusion - the Fleischmann and Pons Electrochemical Route", pp. 35-61.

I.16 A.J.L. Pombeiro, "Coordination Chemistry of Nitriles and Cyanamide at Electron-Rich Metal Centres", *Inorg. Chim. Acta*, 1992, *198-200*, 179-186 (celebratory issue). http://dx.doi.org/10.1016/S0020-1693(00)92359-4

I.17 **Editor of the book** "Molecular Electrochemistry of Inorganic, Bioinorganic and Organometallic Compounds", A.J.L. Pombeiro and J. McCleverty (eds.), NATO ASI Series, Kluwer Academic Publishers, Dordrecht, The Netherlands, 1993 (comprising the full texts of the contributions presented at the NATO Advanced Research Workshop, under the same theme, held in Sintra, Portugal, 1992), [one "key" paper (see I.18) and six short papers (see II.100- II.105)]. http://dx.doi.org/10.1007/978-94-011-1628-2

I.18 A.J.L. Pombeiro, "Electrochemical Behaviour of Complexes Derived from the Activation of Alkynes, Isocyanides and Nitriles", *in* "Molecular Electrochemistry of Inorganic, Bioinorganic and Organometallic Compounds" (NATO Advanced Research Workshop), A.J.L. Pombeiro and J. McCleverty (eds.), NATO ASI Series, Kluwer Academic Publishers, Springer, Dordrecht, The Netherlands, 1993, 331-344.

I.19 A.J.L. Pombeiro, "Chemistry and Electrochemistry of Alkyne- and Isocyanide-Derived Carbyne Complexes of Rhenium, Molybdenum and Tungsten", *in* "Transition Metal Carbyne Complexes" (NATO Advanced Research Workshop), F.R. Kreissl (ed.), NATO ASI Series, Kluwer Academic Publishers, Springer, Dordrecht, The Netherlands, 1993, 105-121. http://dx.doi.org/10.1007/978-94-011-1666-4_13

I.20 A.J.L. Pombeiro, "Molecular Electrochemistry of Complexes with Activated Isocyanide, Nitrile and Alkyne-Derived Ligands", *Anales de Química*, 1993, *89*, 428-436.

I.21 A.J.L. Pombeiro, "Coordination Chemistry of Small Unsaturated-N Molecules atElectron-Rich Mononuclear Centres: Cyanamide, Organonitriles, Nitric Oxide and Related Species", *New J. Chem.,* 1994, *18,* 163-174.

I.22 A.J.L. Pombeiro*, R.L. Richards, "Organometallic Chemistry of Dinitrogen-Binding Metal Sites", *in* "Trends in Organometallic Chemistry", Council of Scientific Research Integration, Research Trends, Trivandrum, India, 1994, *1*, 263-280.

I.23 R. Herrmann, A.J.L. Pombeiro*, "Isocyanides, Versatile Compounds in Biological and Organic Systems", *Química*, 1995, *59*, 16-27 (in Portuguese).

I.24 A.J.L. Pombeiro, "Protonation or Deprotonation Reactions and Their Mechanisms at Low-Valent Transition Metal Phosphinic Complexes", *in* "Progress in Inorganic and Organometallic Chemistry", F.P. Pruchnik and M. Zuber (eds.), Institute of Chemistry(Univ. Wroclaw) and Institute of Inorganic Chemistry and Metallurgy of Rare Elements (Technical Univ. Wroclaw), Poland, 1996, pp. 252-275 (texts of the invited lectures presented at the 1st Internat. Conference on Progress in Inorganic and Organometallic Chemistry, Polanica Zdrój, Poland, 1994 - see 29 *in* "Invited Lectures at Conferences").

I.25 V.Yu. Kukushkin, D. Tudela, A.J.L. Pombeiro*, "Metal-Ion Assisted Reactions of Oximes and Reactivity of Oxime-Containing Metal Complexes", *Coord. Chem.Rev.*, 1996, *156*, 333-362. http://dx.doi.org/10.1016/0010-8545(95)01234-6

I.26 A.J.L. Pombeiro, "Molecular Electrochemistry in Coordination Chemistry: Metal-Ligand Bonds and Their Activation by Electron-Transfer", *New J.Chem.* 1997, *21*, 649-660.

I.27 A.J.L.Pombeiro,"Rhenium Complexes. *trans*-Bis{1,2-bis(diphenylphosphano) ethane}(chloro)(phenylvinylidene)rhenium, *trans*-Bis{1,2-bis(diphenylphosphano) ethane}(*tert*-butylvinylidene)(chloro)rhenium, *trans*-Bis{1,2-bis(diphenylphosphano) ethane}(chloro)(methoxycarbonylvinylidene)rhenium, *tran*-Bis{1,2–bis(diphenyl phosphanoethane}(chloro)(ethoxycarbonylvinylidene)rhenium–ReCl{=C=CHR}{(C 6H5)2PCH2CH2P(C6H5)2}2(R=C6H5, *t*-C4H9, OCOCH3, OCOC2H5)", *in* "Synthetic Methods of Organometallic and Inorganic Chemistry", Vol. 7, "Transition Metals, Part 1", W.A. Herrmann (ed.), Ch. 3 ("Complexes Containing Metal/Carbon Multiple Bonds", F.R. Kreissl), Georg Thieme Verlag, Stuttgart, 1997, pp. 180-181.

I.28 A.J.L. Pombeiro, "*trans*–Bis{1,2–bis(diphenylphosphano)ethane}(methylamino carbyne)(methylisonitrile)tungsten Tetrafluoroborate-*trans*-[(H3C–NC){(C6H5)2 PCH2CH2P(C6H5)2}2W≡CNHCH3][BF4]", *in* "Synthetic Methods of Organometallic and Inorganic Chemistry", Vol. 7, "Transition Metals, Part 1", W.A. Herrmann (ed.), Ch. 3 ("Complexes Containing Metal/Carbon Multiple Bonds", F.R. Kreissl), George Thieme Verlag, Stuttgart, 1997, pp. 207-208.

I.29 A.J.L. Pombeiro, "Rhenium Complexes. *trans*-Bis{1,2-bis(diphenylphosphano) ethane}(chloro)(methylaminocarbyne)rhenium Tetrafluoroborate –*trans*-[ReCl {(CNH(CH3)}{(C6H5)2PCH2CH2P(C6H5)2}2][BF4]", *in* "Synthetic Methods of Organometallic and Inorganic Chemistry", Vol. 7, "Transition Metals, Part 1", W.A. Herrmann (ed.), Ch. 3 ("Complexes Containing Metal/Carbon Multiple Bonds", F.R. Kreissl), George Thieme Verlag, Stuttgart, 1997, pp. 214-215.

I.30 M.F.C. Guedes da Silva, M.F.N.N. Carvalho, M.A.N.D.A. Lemos, A.J.L. Pombeiro*, "Binding and Reactivity of Cyanide, Isocyanide and Aminocarbyne, CNH_x (x = 0-2), at a Single Transition Metal Centre", *in* "Progress in Coordinationand Organometallic Chemistry", G. Ondrejovic and A. Sirota (eds.), "Monograph Series of the International Conferences on Coordination Chemistry", Vol. 3, Slovak Technical University Press, Bratislava, 1997, pp. 143-146 (see 32 *in* "Invited Lectures at Conferences").

I.31 C.M.M. Matoso, A.J.L. Pombeiro*, J.J.R. Fraústo da Silva*, M.F.C. Guedes da Silva, J.A.L. da Silva, J.L. Baptista-Ferreira, F. Pinho-Almeida, "A Possible Role for Amavadine in Some *Amanita Fungi*", *in* "Vanadium Compounds – Chemistry, Biochemistry and Therapeutic Application", A.S. Tracey and D.C. Crans (eds.), American Chemical Society Symposium Series, No. 711, American Chemical Society, Oxford University Press, 1998, Ch. 18, pp. 241-247.

I.32 V. Yu. Kukushkin,* A.J.L. Pombeiro*, "Oxime and Oximate Metal Complexes: Unconventional Synthesis and Reactivity", *Coord. Chem. Rev.*, 1999, *181*, 147-175. http://dx.doi.org/10.1016/S0010-8545(98)00215-X

I.33 M.A.N.D.A. Lemos, P. Sousa, F. Lemos, A.J.L. Pombeiro*, F. Ramôa Ribeiro,"Modelling the Voltammetric Behaviour of Cobalt Cations Inside Zeolites", *in* "Reaction Kinetics and the Development of Catalytic Processes", G.F. Froment and K.C. Waugh (eds.), Elsevier Science Ltd., 1999, pp. 443-446.

I.34 V. Yu. Kukushkin, A.J.L. Pombeiro*, "Metal-Assisted Reactions of Oximes", *in* "Perspectives in Coordination Chemistry", A.M. Trzeciak, P. Sobota and J.J. Ziólkowski (eds.), ("Education in Advanced Chemistry" series, vol. 7), Poznan - Wroclaw, 2000, pp. 217-241.

I.35 A.J.L. Pombeiro*, M.F.C. Guedes da Silva, "Coordination Chemistry of CNH_2,The Simplest Aminocarbyne", *J. Organometal. Chem.*, 2001, *617-618*, 65-69 (special

volume on "Transition Metal Complexes of Carbenes and Related Species in 2000"). http://dx.doi.org/10.1016/S0022-328X(00)00641-0

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57 E. Arantes e Oliveira, A.J.L. Pombeiro,"The Academy of Sciences of Lisbon in an ESF-ALLEA Context", ESF-ALLEA High Level Workshop on the Collaboration between ESF and the Academies, ESF, Brussels, 2008 (*presented by A.J.L.P.*)

58 A.J.L. Pombeiro, "N- and N,O-Ligands in Metal-mediated and Self-assembly Synthesis, and in Catalytic Functionalization of Alkanes", 4th EuCheMS Conference on Nitrogen-

Ligands in Coordination Chemistry, Metal-Organic Chemistry, Bioinorganic Chemistry & HomogeneousCatalysis, Garmisch-Partenkirchen, Germany, 2008, SL17, p. 61 (*Session lecture*).

59 A.J.L. Pombeiro, "Single-pot Functionalization Reactions of Alkanes Catalyzed by Transition Metal Complexes",International Conference on Organometallic and Coordination Chemistry (ICOMCC), Nizhny-Novgorod / Volga river, 2008, PL7 (*Plenary lecture*).

60 N.A. Bokach, M.-J. Wang, M.D. Revenco, A.J.L. Pombeiro*, V.Yu. Kukushkin, "Pop-the-Cork Strategy in Synthetic Utilization of Imines",International Conference on Organometallic and Coordination Chemistry (ICOMCC), Nizhny-Novgorod / Volga river, 2008, S12 (*presented by V.Yu. Kukushkin*) *(Plenary lecture)*.

61 A.J.L. Pombeiro, "Single-pot Oxidations of Alkanes under Mild Conditions Catalyzed by Transition Metal Complexes", Symposium in Honour of Eric Derouane, Technical University of Lisbon, Lisbon, Portugal, 2008.

62 A.J.L. Pombeiro, "Complexes with *N*- and *O*-ligands in the Catalytic Partial Oxidation of Alkanes", Workshop on New Hybrid Metal-organic Materials, University of Camerino, Italy, 2009.

63 A.J.L. Pombeiro,"Metal Complexes and Assemblies as Catalyst Precursors for Single-pot Oxidations of Alkanes", International Workshop on Materials for Catalysis and Energy, National Taiwan University of Science and Technology, Taipei, 2009.

64 A.J.L. Pombeiro, "Metal-catalyzed and -mediated Mild Syntheses of C-, N- and O-containing Compounds", International Workshop on Materials for Catalysis and Energy, National Taiwan University of Science and Technology, Taipei, 2009.

65 A.J.L. Pombeiro, "Carboxylation and Peroxidative Oxidation of Alkanes under Mild Conditions", Gordon Research Conference, Physical Organic Chemistry – Molecular Design and Synthesis, Holderness, USA, 2009.

66 A.J.L. Pombeiro, "Functionalization of Alkanes, a Challenge to Modern Chemistry", XII Regional Seminar of PhD. Students on Organometallic and Coordination Chemistry, Szklarska Poreba, Poland, 2009, PL1 (*Plenary lecture*).

67 A.J.L. Pombeiro, "Electrochemical Characterization of Coordination Compounds and Selected ET-Induced Reactions", 43rd Heyrovský Discussion on Electrochemistry of Organic Molecules and Coordination Compounds, J. Heyrovský Institute of the Czech Republic, Castle Trest, Czech Republic, 2010, p.31(*Plenary lecture*).

68 A.J.L. Pombeiro, "Functionalization of Alkanes under Mild Conditions", 9th Congress of the Interdivisional Group of Organometallic Chemistry of the Italian Chemical Society (COGICO), Florence, Italy, 2010, PL3, p.15 (*Plenary lecture*).

69 A.J.L. Pombeiro, "Metal-catalyzed Selective Oxidation of Alkanes under Mild Conditions", 24th International Conference on Organometallic Chemistry (ICOMC), Taipei, Taiwan, 2010, Ref

70 A.J.L. Pombeiro, "Partial Oxidation and Carboxylation of Alkanes under Mild Conditions", 3rd EuCheMS (European Association for Chemical and Molecular Sciences) Chemistry Congress, Nurnberg, Germany, 2010 (Metal Catalysis Symposium, *Session lecture*).

71 A.J.L. Pombeiro, "Self-assembled Multinuclear Coordination Compounds with N,O-Ligands and Applications in Alkane Oxidations", Moleculare Science – From Molecular to Particulate Building Blocks (3rd EuCheMS Satellite Meeting), Erlangen / Schloss Atzelsberg, Germany, 2010.

72 A.J.L. Pombeiro, "Redox Potential-Structure Relantionships and Activation of Coordination Compounds by Electron-Transfer", 61st Annual Meeting of the

International Society of Electrochemistry, Nice, France, 2010 (Molecular Electrochemistry - Methods, Models, Molecules, Materials Symposium, *Session lecture*).

73 A.J.L. Pombeiro, "Oxo-Vanadium Catalysts for Mild and Partial Oxidation and Carboxylation of Alkanes", 7th International Symposium on the Chemistry and Biological Chemistry of Vanadium, Toyama, Japan, 2010, O-22.

74 A.J.L. Pombeiro, "Functionalization of Alkanes under Mild Conditions", XVI "Luso-Galego" Chemistry Meeting, Aveiro, Portugal, 2010 (*Plenary lecture*).

75 A.J.L. Pombeiro, H.R.M.L.Pombeiro, "Approaches towards "Green Energy" and "Green Catalysis" in Portugal", Centennial International Conference of the Chinese Institute of Engineers, Taipei, Tawian, June 2011 (*Plenary lecture).*

76 A.J.L. Pombeiro, "Complexes Bearing N-, N,O- or N,P- ligands in Multinuclear Assemblies and in Oxidation or C-C Coupling Catalyses", 5th EuCheMS Conference on Nitrogen Ligands, Granada, Spain, September 2011 (*Keynote lecture*).

77 A.J.L. Pombeiro, "Molecular Electrochemistry of Coordination Compounds: Redox Potential-Structure Relationships and ET-induced Reactions", XIII Iberian Meeting of Electrochemistry/ XXXII Meeting of the Electrochemistry Group of the Spanish Royal Society of Chemistry, Murcia, Spain, September 2011(*Plenary lecture).*

78 A.J.L. Pombeiro, "Electron-Transfer in Coordination Compounds:Redox Potential and Selected ET-induced Reactions", 62nd Annual Meeting of the International Society of Electrochemistry, Niigata, Japan, September, 2011.

79 A.J.L. Pombeiro, "Towads Partial Oxidation of Alkanes under Green Conitions", Internatioal Syjmposium on Homogneous Catalysis, Tolouse, France, July, 2012.

80 A.J.L. Pombeiro, "Metal-catalyzed, Metal-promoted and Metal-free functionalization of alkanes", 4th EuCheMS (European Association for Chemical and Molecular Sciences) Chemistry Congress, Prague, August, 2012 (*keynote lecture*).

81 A.J.L. Pombeiro, "Oxidations of Alkanes and Alcohols under Mild and Green Conditions", FOC (Frontiers of Organometallic Chemisry) Congress, St. Petersburg, Russa, September, 2012 (*plenary lecture).*

82 A.J.L. Pombeiro, "Can Alkanes Become Feedstocks for Organic Synthesis?", Catalysis: from the Active Site to the Process (Symposium in honor of F. Ramôa Ribeiro), Lisbon, October 2012.

83 A.J.L. Pombeiro, M. F. C. Guedes da Silva, "Redox Potential Parameterization in Half Sandwich Coordination Compounds", 46th Heyrovský Discussion (Molecular electrochemistry in organometallic science), HeyrovskýInstitute of the Czech Republic, Castle Trest, Czech Republic,June, 2013 (presented by AJLP).

84 A.J.L. Pombeiro, "Catalysis towards Functionalization of Alkanes under Green Conditions", 9th National Meeting on Catalyis and Porous Materials, Portuguese Chemical Society, Porto, May 2013, PL1, p.3 (*plenary lecture*).

85 A.J.L. Pombeiro, "Metal-assisted and Metal-catalyzed Activation of Small Molecules", XXIII National Meeting of the Portuguese Chemical Society, Aveiro, June 2013,FS1, p.25 (*plenary lecture, Ferreira da Silva Prize).*

86 A.J.L. Pombeiro, M.F.C. Guedes da Silva, "Electrochemical Ligand Parameterization in Half-Sandwich Complexes", XV Iberian Meeting of Electrochemistry/ XXXIV Meeting of the Electrochemistry Group of the Spanish Royal Society of Chemistry, Valencia, Spain, July 2013 (presented by AJLP) (*keynote lecture).*

87 A.J.L. Pombeiro, M.F.C. Guedes da Silva, M.L. Kuznetsov, E.C.B.A. Alegria, L.M.D.R.S. Martins, "Combined Electrochemical and Theoretical Studies on ET-induced Reactions of Coordination Compounds", 64th Annual ISE (International Society of Electrochemistry) Meeting, Queretaro, Mexico, September, 2013 (*keynote lecture*, presented by AJLP).

88 A.J.L. Pombeiro, M.F.C. Guedes da Silva, “Redox Potential as a Tool for the Chracterization and Identification of Metal Complexes”, MicroEchem 3013 (New Processes and Materials Based on Electrochemical Concepts at the Microscopic Level, Satellite Conference to the 64th Annual ISE Meeting), La Muralla, Amealco de Bonfil, Queretaro, Mexico, September, 2013 (*keynote lecture*, presented by AJLP).

89 A.J.L. Pombeiro, M.F.C. Guedes da Silva,M.L. Kuznetsov,M.N. Kopylovich, K.V. Luzyanin, V.Yu. Kukushkin, “Nitrile- and Isocyanide-derived Pd and Pt Complexes in Metal-mediated Synthesis and Catalytic C-C coupling”, 20th Chernyaev Conference on Chemistry, Analytics and Technology of Platinum Metals, October 7-12, 2013, Krasnoyarsk, Russia (*plenary lecture*, presented by AJLP).

90 A.J.L. Pombeiro, "Functionalization of Alkanes under Mild Conditions: a Challenge to Coordination Chemistry", Zing Coordination Chemistry Conference, Cancun, Mexico, December, Dec 5-9, 2013 (*plenary lecture*).

91 A.J.L. Pombeiro, “On the Way to Metal-catalyzed and Metal-free Functionalization of Alkanes under Green Conditions”, One Day on Organometallic Chemistry (in honor of Armando J. L. Pombeiro), University of Oviedo, Jan. 2014

92 A.J.L. Pombeiro, “Mono- and Multinulear Compounds as Efficient Catalyst Precursors in Oxidations of Alkanes and Alcohols”, 16th Plenary Scientific Meeting of Inorganic Chemistry/ 10th Scientific Meeting of Solid State Chemistry, Almeria, June 2014, PL1(*plenary lecture*).

93 A.J.L. Pombeiro, “Vanadium Catalysts in Alkane Partial Oxidation”, 9th International Vanadium Symposim, Padova, June-July, 2014.

94 A.J.L. Pombeiro, “Oxidations of Alkanes and Alcohols under Mild Conditions”, XXVI International Conference on Organometallic Chemistry (ICOMC), Sapporo, Japan, July 2014, 2D04S(*session lecture*).

95 A.J.L. Pombeiro, “From Electrocatalysis to Alkane Oxidation Catalysis with Inorganic Coordination Compounds”, South Europe – Japan Joint Forum: Inorganic Chemistry and Its Interfaces", Strasbourg, France, October 2014 (*plenary lecture*).

96 A.J.L. Pombeiro, “Metal-catalyzed Oxidations of Alkanes under Mild Conditions”, Conference on Achievements and Problems in Modern Chemistry – Symposium of the International Laboratory of Organometallic Chemistry, Saint Petersburg State University, Russia, November 2014, p.185 (*plenary lecture*).

97 A.J.L. Pombeiro, “Catalytic Alkane Oxidations under Mild Conditions”, Symposium on Recent Advances in Chemistry (REACH-2015), Noth Eastern Hill University, Shillong, India, March 2015, PL-2, p.4 (*plenary lecture*).

98 A.J.L. Pombeiro, “Water as Solvent, Catalyst and Reagent in Selected Coodination Chemistry Systems”, Metal, Water and Sun 2015 Workshop, Almeria, Spain, May 2015 (*plenary lecture*).

99 A.J.L. Pombeiro, “Catalysis: the Magic Chemistry”, XII Conference on Problems of Solvation and Complex Formation in Solutions (From theEffects in Solutions to NewMateials), Yvanovo, Russia, June 2015, p5 (*plenary lecture*).

100 A.J.L. Pombeiro, “Playing with Electrons: the Magic of Molecular Electrochemistry”, XX Meeting of the Portuguese Electrochemical Society, Braga, October 2015 (*Prize Award lecture*).

101 K. Mahmudov, A.J.L. Pombeiro, “Resonance-Assisted Hydrogen Bonding as a Synthetic Tool”, Strong Links via Weak Interactions, 5th Internatioal Symposium on Organometallic Chemistry, Saint Petersburg State University, Russia, January 2016.

102 A.J.L. Pombeiro,”Playing with Water in Metal Catalysis”, Cluster Conference *OrgChem-2016*, Repino, St.Petersburg, Russia, June 27-July1, 2016 (*plenary lecture*).

103 A.J.L. Pombeiro,"Water ion Alkane Functionalization and Other Oxidation Catalyses with Metal Copordination Compunds", XX International Symposium on Homogeneous Catalysis (ISHC)", Kyoto, Japan, July10-15, 2016, SL22 *(session lecture)*.

104 A.J.L. Pombeiro, "Vanadium Complexes in Water, Alcohol and Alkane Oxidation Catalysis", 10th International Vanadium Symposium, Taipei, Taiwan, November 6-9, 2016 (*plenary lecture*).

105 A.J.L. Pombeiro, "Homogeneous Alkane Functionalization towards Organic Synthesis", OXO Symposium (Advances in OXO process – where science meets industry), Wroclaw, Poland, November 17-18, 2016.

106 A.J.L. Pombeiro, "Oxidation and Lewis Acid Metal Catalysis in Water Medium", Metals and Water 2017, II International Conference on Water Soluble Metal Complexes, Jaca, Spain, June 13-15, 2017 (*plenary lecture*).

107 A.J.L. Pombeiro,"Inert Alkanes as Potential Feedstocks for Synthesis?",XXV Meeting of the Portuguese Chemical Society, Lisbon, July 16-19, 2017 (*plenary lecture*).

108 A.J.L. Pombeiro, "Functionalization of Alkanes: a Challenge in Catalysis towards Organic Synthesis", 2nd International Symposium on Synthesis and Catalysis (ISySyCat), Évora, Portugal, September 5-8, 2017 (*plenary lecture*).

109 K.T. Mahmudov, A.V. Gurbanov, M.F.C. Guedes da Silva, A.J.L. Pombeiro, "Noncovalent Interactions in Synthesis, Catalysis and Design of Materials", IUPAC Workshop@ISXB-3 Interactions Involving Group 14 - 16 Elements as Electrophilic Sites: A World Parallel to Halogen Bond, 9 –14 June 2018, Greenville, USA, p. 36 (*invited lecture presented by KTM*).

110 A.J.L. Pombeiro, "Coordination Polymers and Multinuclear Compounds as Catalysts in Oxidation, Cyanosilylation and Other Reactions", 28th International Conference on Organometallic Chemistry, Florence, Italy, July 15-20, 2018, IL31 (invited lecture).

111 A.J.L. Pombeiro, "Synthesis and Catalytic Applications of Vanadium Complexes with N- or O-Ligands", 11th International Vanadium Symposium, Montevideo, Uruguay, 5-8 November, 2018, PL-5 (*Vanadis award plenary lecture*).

112 A.J.L.Pombeiro, "Vanadium Complexes in Oxidation Catalysis: Metal-ligand Cooperation", Spring 2019 American Chemical Society National Meeting, Orlando, USA, March 31 - April 4, 2019 (Symposium in honor of Debbie Crans: ACS Award for Distinguished Service in the Advancement of Inorganic Chemsitry, ACS Inorganic Chemistry Division). *Abstracts of Papers of the American Chemical Society*, 2019, *257*, Abstract 500.

113 A.J.L. Pombeiro, "Alkanes as Potential Feedstocks in Metal Catalysed Organic Synthesis", 5th International Scientific Conference "Advances in Synthesis and Complexing", RUDN University, Moscow, Russia, April 22-26, 2019 (*keynote lecture*).

114 K.T. Mahmudov, M.F.C. Guedes da Silva, A.J.L. Pombeiro, "Noncovalent Interactions in Catalysis", World Chemistry Forum 2019, Barcelona, Spain, May 22-24, 2019 (*invited lecture* presented by KTM).

115 A.J.L. Pombeiro, "Coordination Chemistry and Catalysis Group at the University of Lisbon: Alkane Functionalization", Société Chimique de France (SCF, French Chemical Society) Prizes meeting, Maison de la Chimie, Paris, May 16th, 2019 (*SCF French-Portuguese Award lecture*).

116 A.J.L. Pombeiro, "Catalytic Alkane Functionalization towards Sustainable Synthesis", XI International Conference for Young Scientists Mendeleev 2019, Institute of Chemistry, Saint Petersburg State University, September 10th, 2019 (*Honorary Professorship plenary lecture*).

117 K.T. Mahmudov, A.V. Gurbanov, M.F.C. Guedes da Silva, A.J.L. Pombeiro, "Noncovalent Interactions in Metal Complex Catalysis", 1st International Conference on

Noncovalent Interactions (ICNI), 2019, Lisboa, Portugal, September 2-6, 2019, KL23 (*keynote lecture* presented by KTM).

118 A.J.L. Pombeiro, "Alkane Functionalization: a Promising Apprach for Organic Synthesis?", XXI Mendeleev Congress on General and Applied Chemistry, Saint Petersburg, September 11th, 2019 (*invited lecture*).

119 A.J.L. Pombeiro, "Alkane Functionalization, the Avenir of a New Era in Organic Synthesis", Chemistry of the Organoelement Compounds and Polymers, INEOS (Nesmeyanov Institute of Organoelement Compounds) 65th Anniversary Conference, Moscow, November 18th-22nd, 2019 (*plenary lecture*).

120 A.J.L. Pombeiro, "Catalysis towards Translational Alkane Functionalization", 3rd International Caparica Christmas Conference on Translational Chemistry, Costa da Caparica, Portugal, December 2nd-5th, 2019 (*plenary lecture*).

121 K.T. Mahmudov, V.A. Aliyeva, M.F.C. Guedes da Silva, A.J.L. Pombeiro, "Copper(II) Arylhydrazonates: Synthesis and Catalysis", III International Workshop on Chemistry of Group 11 Elements, NOVA School of Science and Technology, Caparica, Portugal, January 30th-31st, 2020 (*keynote lecture*, presented by KTM).

122 A.J.L. Pombeiro, "Metal Coordination Catalysis of Selected Small Molecules towards Sustainability", 3rd Struchkov Meeting (International Workshop on Chemical Crystallography and Structural Biology), RUDN University, Moscow, November 15th-19th, 2021 (*plenary lecture,* videoconference).

123 K.T. Mahmudov, A.V. Gurbanov, V.A. Aliyeva, M.F.C. Guedes da Silva, G. Resnati, A.J.L. Pombeiro, "Chalcogen bonding at the secondary coordination sphere of metal complexes: Invariancy and Tunability", IUPAC Workshop "Interactions Involving Elements of Group 11, 14, 15, 16 and beyond", July 22, 2022, within the 2nd International Conference on Non-Covalent Interactions (ICNI), University of Strasbourg, France, July 18-22, 2022, WS5 (*invited lecture, presented by KTM*).

124 A.J.L. Pombeiro, "Selected Topics towards Sustainable Redox and Lewis Acid Catalysis", 6th International Scientific Conference "Advances in Synthesis and Complexing", RUDN University, Moscow, Russian Federation, September 26-30, 2022 (*keynote lecture*, videoconference).

125 A.J.L. Pombeiro, "Coordination Polymers and Metal-Organic Frameworks (MOFs) in Selected Catalytic Reactions", 4th International Symposium Modern Trends in Organometallic Chemistry (dedicated to Mark Vol'pin 100th Anniversary), INEOS (Nesmeyanov Institute of Organoelement Compounds), Moscow, Russian Federation, May 23-27, 2023, RL1 (opening *plenary lecture*, videoconference).

126 A.J.L. Pombeiro, "Shift of Alkanes from Fuels to Feedstocks for Organic Synthesis: a Proof of Concept towards Sustainability", Annual Symposium of the European Academy of Sciences (EURASC), "Science Multidisciplinarity in the 21st Century: the future of energy", Real Academia de Ciencias Exactas, Físicas y Naturales de España, Ocober 23-24, Madrid, Spain (*invited lecture*, to be presented).

OTHER INVITED LECTURES AT SCIENTIFIC INSTITUTIONS

Delivered in-presence (unless stated otherwise)

1 "Addition Reactions of *trans* [$Mo(CNR)_2(dppe)_2$]", Chemistry Discussions, Unit of Nitrogen Fixation, University of Sussex, U.K., 1974 (with R.L. Richards).

2 "Carbyne Complexes. Preparation and Reactions", Inorganic Discussions, University of Sussex, U.K., 1975.

3 "Carbyne Complexes of Molybdenum and Tungsten", VIII Leeds-Sheffield Conference, U.K., 1976 (with J. Chatt and R.L. Richards).

4 "Dinitrogen Displacement from Metal Complexes. The Generation of Carbyne Complexes", Inorganic Chemistry Seminars, Wayne State University, U.S.A., 1981.

5 "Isocyanide and Derived Carbyne Complexes of Rhenium", Inorganic Discussions, University of Sussex, U.K., 1981.

6 "Chemistry and Electrochemistry of Isocyanide Complexes with Dinitrogen Binding Sites", University of Southampton, U.K., 1982.

7 "Binding and Activation of Isocyanides by N_2 Ligating Transition Metal Centres", University College London, U.K., 1984.

8 "Activation of Isocyanides and Acetylenes by Dinitrogen-Binding Group VI and VII Transition Metal Centres", University of Birmingham, U.K., 1984.

9 "Aplication of Isocyanides and Electrochemical Methods on the Study of Dinitrogen and its Binding Sites", Institute of Chemical Engineering and Physical Chemistry, Technical University of Cracow, Poland, 1985.

10 "Activation of Small Molecules by Transition Metal Centres: Models for Nitrogenase", Technische Universität München, Garching, Federal Republic of Germany, 1985.

11 "Electrochemistry of Complexes of Isocyanides and Related Ligands. Application to the Study of Their Electronic Properties and Affinity for the Binding Sites", University of Poitiers, France, 1985.

12 "Rhenium-Carbon Multiple Bonds: Isocyanide- or Alkyne-derived Carbyne, Carbene, Allene and Metallacyclopropene Complexes", University of Newcastle upon Tyne, U.K., 1986.

13 "Activation of Alkynes and Isocyanides by Electron-Rich Metal Centres", University of Sheffield, U.K., 1986.

14 "Alkyne Activation by Rhenium Sites", University of Sussex, U.K., 1986.

15 "Generation of Metal-Carbon Multiple Bonds by β-Electrophilic Addition to Isocyanide or Alkyne-Derived Ligands", Universität Würzburg, Federal Republic of Germany, 1987.

16 "Chemistry and Electrochemistry of Electron-Rich Complexes with Unsaturated Carbon Coordination", University of Amsterdam, The Netherlands, 1988.

17 "Syntheses and Reactivity of Isocyanide, Nitrile and Alkyne-Derived Complexes", University of Essex, U.K., 1988.

18 "Chemistry and Electrochemistry of Complexes with Small Unsaturated Ligands", Faculty of Engineering (Industrial Chemistry Institute, University of Padova) and Faculty of Mathematical, Physical and Natural Sciences (Institute of General and Inorganic Chemistry, University of Parma), Italy, 1989.

19 "Chemistry and Electrochemistry of Complexes with Nitrogenase Substrates", Faculty of Mathematical, Physical and Natural Sciences (Department of Chemical Sciences), University of Trieste, Italy, 1990.

20 "Activation of Small Unsaturated Molecules: Chemistry and Electrochemistry of Their Rhenium Complexes", Chemistry Department, Institute for Nuclear Sciences and Engineering (ICEN), National Laboratory for Engineering and Industrial Tecnology (LNETI), Sacavém, Portugal, 1993.

21 "Complexes with Multiple Metal-Carbon Bonds towards Organic Synthesis", meeting of the EC Network on "Multiple Metal-Carbon Bond Species in Selective Processes", University of Milan (Department of Organic and Industrial Chemistry), Italy, 1995.

22–30 "The State of Research in Portugal" or "Scientific Research in Portugal – Current Situation and Perspectives", Air Force High Studies Institute, Higher Course on Air War, Sintra, Portugal, 1995-2003 (annual up-dated lectures, 3 or 4h).

31 "Complexes with Multiple Metal-Carbon Bonds: Some New Results and Perspectives", meeting of the EC Network on "Multiple Metal-Carbon Bond Species in Selective Processes", University of Rennes, France, 1996.

32 "Molecular Electrochemistry of Complexes with Coordinated Small Molecules", meeting of the EC Network on "Selective Processes and Catalysis Involving Small Molecules", Institute for Biological and Chemical Tecnology (ITQB), Oeiras, Portugal, 1996.

33 "Developments in the Chemistry and Electrochemistry of Some Complexes with Multiple Metal-Carbon Bonds", meeting of the EC Network on "Multiple Metal-Carbon Bond Species In Selective Processes", University of Milan (Department of Organic andIndustrial Chemistry), Italy, 1997.

34 "Complexes with Multiple Metal-Carbon Bonds and Related Species (Latest Results)", meeting of the EC Network on "Multiple Metal-Carbon Bond Species in Selective Processes", University of Camerino, Italy, 1997.

35 "Coordination Chemistry in Biological and Industrial Catalysis", Expoquímica 98 (Expochemistry 98), ISEL (Higher Institute of Engineering of Lisbon), Lisbon, 1998.

36 "Activation of Small Molecules with Biological, Environmental or Industrial Significance", VII Conferences Series, New University of Lisbon, Monte da Caparica, 1999.

37 "Activation of Unsaturated C- or P-ligated Small Molecules: Alkynes, Phosphaalkynes, Isocyanides and Cyanide", G.A. Razuvaev Institute of Organometallic Chemistry of the Russian Academy of Sciences, Nizhny Novgorod, Russia, 1999.

38 "Molecular Electrochemistry of Coordination Compounds", G.A. Razuvaev Institute of Organometallic Chemistry of the Russian Academy of Sciences, Nizhny Novgorod, Russia, 1999.

39 "Activation of Small Molecules towards Some Biomimetic, Pharmacological and Synthetic Processes", Department of Engineering Chemical Processes, University of Padova, Italy, 2001.

40 "Metal-Mediated Reactions of Alkanes and Other Small Molecules with Biological or Synthetic Significance", Department of Chemistry and Biochemistry, Graduate School of Engineering, Kyushu University, Fukuoka, Japan, 2001.

41 "Activation of Small Molecules towards Some Biomimetic and Synthetic Processes", Department of Chemistry and Biochemistry, Graduate School of Engineering, The University of Tokyo, Japan, 2001.

42 "Metal-mediated Reactions of Alkanes and Nitriles", Department of Engineering Chemical Processes, University of Padova, Italy, 2003.

43 "Chemistry and Electrochemistry of Selected Small Molecules towards Catalysis in Aqueous Medium", AQUACHEM Meeting, "Transition Metal Chemistry and Catalysis in Aqueous Media" Network, University of Florence, Italy, 2004.

44 "Alkanes and Nitriles in Metal-mediated Organic Synthesis", École Polytechnique, Palaiseau, Paris, France, 2004.

45 "Alkanes and Nitriles in Metal-mediated Organic Synthesis", Department of Engineering Chemical Processes, University of Padova, Italy, 2004.

46 "Prof. Fraústo da Silva" homage on the occasion of his retirement ("Jubilação"), Instituto Superior Técnico, 2004.

47 "Aqueous Chemistry at the IST Group: Overall View", 1st Year AQUACHEM Meeting, Academy of Sciences of Lisbon, Lisbon, 2005.

48 “Alkanes and Nitriles in Metal-mediated Synthesis and Catalysis”, Faculty of Chemistry, University of Vienna, Austria, 2005.
49 “Chemistry in Aqueous Medium at the IST Group: Overall View”, AQUACHEM Final Meeting, Toulouse, 2007.
50 “Catalytic Functionalization of Alkanes under Mild Conditions”, Federal University of S. Carlos, Brazil, 2008.
51 “Single-pot Functionalization of Alkanes under Mild Conditions”, Pontifical Catholic University of Campinas, Brazil, 2008.
52 Presentation of the book “The Inorganic Chemistry of the Brain” and its authors, J.J.R. Fraústo da Silva and J.A.L. da Silva, launching ceremony (ed. Gradiva), Lisbon, 2008.
53 “Single-pot Catalytic Peroxidative Oxidation and Carboxylation of Alkanes under Mild Conditions”, National Taiwan University, Taipei, Taiwan, 2009.
54 “Single-pot Catalytic Peroxidative Oxidation and Carboxylation of Alkanes under Mild Conditions”, Cheng-Kung University,Tainan, Taiwan, 2009.
55 “Functionalization of Alkanes under Mild Conditions: Challenge to Modern Chemistry”, Kyushu University, Fukuoka, Japan, 2010.
56 “Functionalization of Alkanes under Mild Conditions: Challenge to Modern Chemistry”, Saga University, Saga, Japan, 2010.
57 “Can Alkanes Shift from Fuels to Feedstocks in Organic Synthesis?”, ChemForum, IST, Lisbon, 2011.
58 “Mild Functionalization of Alkanes towards Synthetic Applications”, University of Camerino, Italy, May, 2012.
59 “Functionalization of Alkanes under Mild Conditions”, Collaborative Research Center on Molecular Catalysts: Structure and Functional Design, University of Heidelberg, Germany, January, 2013.
60 “Alkanes as Feedstocks in Catalysis and Organic Synthesis?”, New University of Lisbon, February, 2013.
61 “Functionalization of Alkanes under Mild Conditions: Transition Metal-catalyzed Peroxidative Oxidations”, Lomonosov Moscow State University of Fine Chemical Technologies, April, 2013.
62 “Functionalization of Alkanes under Mild Conditions: Other Catalytic Reactions and Mechanisms”, Lomonosov Moscow State University of Fine Chemical Technologies, April, 2013.
63 “Molecular Electrochemistry of Metal Complexes: Redox Potential-Structure Relationships”, Lomonosov Moscow State University of Fine Chemical Technologies, April, 2013.
64 "Towards Mild Oxidation and Carboxylation of Alkanes", École Polytechnique, Paris, June, 2013.
65 “Homogeneous Catalysis in Industry: Introduction and Selected Processes”, Lomonosov Moscow State University of Fine Chemical Technologies, June 2015.
66 “Water in Coordination Chemistry Catalysis”, Lomonosov Moscow State University of Fine Chemical Technologies, June 2015.
67 “Alkane Functionalization towards Sustainable Catalysis”, Faculty of Chemistry, University of Wroclaw, Poland, September 2015.
68 “Research at the *Centro de Química Estrutural* and Catalytic Alkane Functionalization towards Sustainable Chemistry”, Guang Xi University, China, December 2015.
69 "Towards Functionalization of Alkanes under Sustainable Conditions: Roles of Water", University of Liverpool, UK, October 12, 2016.

70,71 “Metal-catalysed Oxidations of Alkanes, Alcohols and Water”, National Tsing Hua University (Hsinchu city) and National Taiwan Normal University (Taipei city), Taiwan, November 10 and 11, 2016.

72 “Catalysis: the Magic Chemistry”, Saint Petersburg State University, Institute of Chemistry, Guest Lecturer within the Russian Program on Iberian-American Cooperation, June 15th, 2018 (awarded for the 1st time to the Science field).

73 “The College of Chemistry of the University of Lisbon”, Beijing University of Chemical Technology, Beijing, China, December 5th, 2018.

74 “Catalysis at the University of Lisbon”, Beijing University of Chemical Technology, Beijing, China, December 5th, 2018.

75 “Homogeneous Catalysis: Basis and Selected Applications”, RUDN University, Moscow, Russia, April 25th, 2019 (didactic).

76 “Selected Metal Catalysts Spanned Over the Periodic Table towards Alkane Functionalization”, Catalysis and the Periodic Table Symposium, Celebration of the 150th Anniversary of the Periodic Table, Academy of Sciences of Lisbon, October 3rd, 2019.

77 “Metal-Organic Frameworks (MOFs) and Selected Applications”, Nanjing University of Science and Technology, March 22nd, 2023 (videoconference).

78 “Metal-Organic Frameworks in Catalysis”, RUDN University, to be presented.

SPEECHES, ALLOCUTIONS AND INTERVIEWS

Delivered in-presence (unless stated otherwise)

1 Opening of the Symposium on "New Trends in the Chemistry of Nitrogen Fixation", Academy of Sciences of Lisbon, Lisbon, 1979.

2,3 Opening and closing of the II National Meeting on Electrochemistry, Academy of Sciences of Lisbon, 1982.

4 Opening of the celebratory session of the 5th anniversary of the Portuguese Electrochemical Society, 4th Meeting of this Society, Sintra/Estoril, March 1989.

5 Round table discussion on "Information in Science and Technology in the Route for the European Economic Community" (chairman: Prof. V.M. Tyutyunnik), within the monthly programme "Under The π-Sign"of the Moscow Television, U.S.S.R., 1991 (*TV round table discussion*).

6,7 Opening and closing of the NATO Advanced Research Workshop on "Molecular Electrochemistry of Inorganic, Bioinorganic and Organometallic Compounds", Sintra, Portugal, 1992.

8,9 Opening and closing of the symposium “New Trends in Molecular Electrochemistry” and of the XII Meeting of the Portuguese Electrochemical Society, Academy of Sciences of Lisbon, 2003.

10,11 Opening and closing of the 1st year AQUACHEM meeting, Academy of Sciences of Lisbon, 2005.

12 Presentation of the proposal for the organization of the XXV International Conference on Coordiunation Chemistry (ICCC) to be held in Lisbon in 2012, International Advisory Board Meeting, XXII ICCC, Zaragoza, 2006 (selected proposal in competition with others).

13 Presentation of the XXV International Conference on Organometallic Chemistry (ICOMC) at the XXIV ICOMC, Taipei, Taiwan, 2010.

14 Award of the 1st Young Researcher Prize of the Portuguese Electrochemical Society to Dr. Mikhail Zheludkevich and presentation of the awardee at the XVI Meeting of the Portuguese Electrochemical Society (XII Iberian Meeting of Electrochemistry), ISEL, Lisbon, 2010.

15,16 Opening and closing of the XXV International Conference on Organometallic Chemistry, Lisbon, 2012.

17 Opening of the XVII Meeting of the Portuguese Electrochemical Society (XIV Iberian Meeting), Funchal, 2012.

18 Awards of the 1st Prize of the Portuguese Electrochemical Society to Prof. José Simões Redinha and to Prof. Victor Lobo and presentation of the awardees at the XVIII Meeting of the Portuguese Electrochemical Society, University of Porto, 2013.

19 Opening session of the XV Iberian Meeting of Electrochemistry (XXXIV Meeting of the Electrochemistry Group of the Spanish Royal Society of Chemistry), Valencia, Spain, July 2013.

20 Award of the Prize of the Portuguese Electrochemical Society to Prof. João Simão and presentation of the awardee at the XIX Meeting of the Portuguese Electrochemical Society (XVI Iberian Meeting of Electrochemistry), University of Aveiro, 2014.

21 “In memory of Prof. Rino Michelin”, *Alza-bara* academic funeral ceremonies, Bo Palace, University of Padova, Italy, July 2014.

22 Presentation of the book “Advances in Organometallic Chemistry and Catalysis” (*The Silver/Gold Jubilee ICOMC Celebratory Book,* J. Wiley & Sons, 2014), Luncheon

Meeting, XXVI International Conference on Organometallic Chemistry, Sapporo, Japan, July 2014.

23 Allocution at the Conference banquet of the XXVI International Conference on Organometallic Chemistry, Sapporo, Japan, July 2014.

24 Presentation of the Centro de Química Estrutural and its Strategic Program (2015-20) to the international Evaluation Panel of the FCT Research and Development Units, IST, Lisbon, October 2014.

25 Recipient salutation to ("Saudação ao Recipiendário") Professor/Academician José Simões Redinha as Full Member of the Academy of Sciences of Lisbon, Academy of Sciences of Lisbon, Plenary Session, December 4th, 2014 (see V.29). http://www.acad-ciencias.pt/document-uploads/7079120_2014-12-04-redinha_pombeiro.pdf

26 Jubilee Ceremony in honor of Prof. José Luís Figueiredo, Faculty of Engineering, University of Porto, March, 2015.

27 Historical evocation ("Elogio Histórico") of Professor/Academician Herculano de Carvalho, Academy of Sciences of Lisbon, Plenary Session, June 18th, 2015 (see V.30). http://www.acad-ciencias.pt/document-uploads/6918960_2015-06-18-pombeiro-e-redinha.pdf

28 Recipient salutation to ("Saudação ao Recipiendário") Professor/Academician Sebastião Formosinho as Full Member of the Academy of Sciences of Lisbon, Academy of Sciences of Lisbon, Plenary Session, December 3rd, 2015 (see V.30). http://www.acad-ciencias.pt/document-uploads/6701912_2015-12-03-apombeiro-saudacao.pdf

29 Presentation of Prof. Claudio Pettinari as a Corresponding Member of the Academy of Sciences of Lisbon, October 2015.

30 Opening session, CATSUS 1 Workshop, Academy of Sciences of Lisbon, September 2015.

31-34 Presentation of the CATSUS (Catalysis and Sustainability) PhD Programme, meetings with the External Advisory Committee (IST, Lisbon, November 2015; Coimbra, 2016; Faculty of Sciences of the Univertsity of Lisbon, 2017; ITQB, 2018).

35 Presentation of the proposal for the organization of the XXII International Symposium on Homogeneous Catalysis (ISHC) to be held in Lisbon in 2020, International Advisory Board Meeting, XX ISHC, Kyoto, Japan, July 2016 (selected proposal in competition with others).

36 Presentation of the College of Chemistry of the University of Lisbon, public ceremony to launch this College, Rectory of the University of Lisbon, October 27th, 2016.

37 Presentation of the Centro de Química Estrutural, meeting with the External Advisory Board, November 29th, 2016.

38 Presentation of the By-Laws and of the planned activities of the College of Chemistry of the University of Lisbon, 1st Assembly of the College, April 17th, 2017.

39 Opening session of the 1st Meeting of the College of Chemistry of the University of Lisbon ("Chemistry in the Research of the Universidade de Lisboa"), Rectory, University of Lisbon, July 20th, 2017.

40 Opening and closing sessions of the 2nd Meeting of the College of Chemistry of the University of Lisbon ("Chemistry PhD Meeting"), Rectory, University of Lisbon, December 4-5th, 2017.

41 Presentation of Prof. Samir Zard as a Corresponding Member of the Academy of Sciences of Lisbon, April 19th, 2018.

42 Opening and closing sessions of the ceremony of the first CQE Emeritus Member Awards, IST, May 24th, 2018 (awardees: Prof. Fraústo da Silva (*in absentia*), Prof. Sívia Costa, Prof. Maria Lurdes Gonçalves).
43 Biography of Prof. Fraústo da Silva, the founder of CQE, above ceremony.
44 Invited interview to the *Saint Petersburg Chronicle Journal*, Russian Chemical Society, St. Petersburg, June 13th, 2018.
45 Opening session of the Summer School, 3rd Meeting of the College of Chemistry of the University of Lisbon, June 29, 2018.
46 Presentation of the XXII International Symposium on Homogeneous Catalysis (ISHC) to be held in Lisbon in 2020, at the International Advisory Board Meeting and at the closing ceremony, XXI ISHC, Amsterdam, The Netherlands, July 8-13, 2018.
47,48 Opening and Closing sessions of the 7th EuCheMS Conference on Nitrogen-Ligands (September 4-7, 2018).
49 Opening session (Welcome and Introduction) of the visit of the FCT International Evaluation Panel to CQE (September 21st, 2018).
50 Welcome session of the 4th CATSUS (Catalysis and Sustainability) workshop, Institute of Chemical and Biological Technology (ITQB), November 13th, 2018.
51 Presentation of the College of Chemistry of the University of Lisbon at the Beijing University of Chemical Technology, Beijing, China, December 3rd, 2018.
52 Opening session of the ceremony of the CQE Emeritus Member Award to Prof. João C. Pessoa, IST, December 19th, 2018.
53 Interview by the Instituto Superior Técnico: Prof. Armando Pombeiro elected Fellow of the European Academy of Sciences, *Notícias – Tecnico Lisboa*, January 29th, 2019 (in Portuguese).
https://tecnico.ulisboa.pt/pt/noticias/professor-armando-pombeiro-eleito-fellow-da-academia-europeia-das-ciencias/
54 Invited allocution on behalf of the awardees of the Scientific Prize of the University of Lisbon (Opening of the Awarding Ceremony), April 8th, 2019, Lisbon (in Portuguese).
55 Interview by the French Chemical Society: "Rencontre avec Armando J.L. Pombeiro, prix Franco-Portugais 2018 de la SCF". Maison de La Chimie, Paris, May 16th, 2019 (recorded on video, on the occasion of the Prix Franco-Portugais awarded by this Society)
https://www.youtube.com/watch?v=_hI-jhiKQ0Y
56 Interview by the Instituto Superior Técnico: Prof. Armando Pombeiro awarded by the French Chemical Society, *Notícias – Tecnico Lisboa*, June 4th, 2019 (in Portuguese).
https://tecnico.ulisboa.pt/pt/noticias/professor-armando-pombeiro-premiado-pela-sociedade-francesa-de-quimica/
57 Opening session of the 4th Meeting of the College of Chemistry of the University of Lisbon, Rectory, July 16th, 2019.
58,59 Opening and closing sessions of the Summer School of the 4th Meeting of the College of Chemistry of the University of Lisbon, Rectory, July 19th, 2019.
60,61 Allocutions on the occasion of the *Honorary Professorship* ceremonies at Saint Petersburg State University, Institute of Chemistry (award session and tree planting celebratory ceremony), September 10th, 2019.
62 Interview by the Instituto Superior Técnico: Docente do Técnico nomeado professor honorário da Universidade Estatal de S. Petersburgo, *Notícias – Tecnico Lisboa*, September 24th, (updated on 26th), 2019 (in Portuguese).
https://tecnico.ulisboa.pt/pt/noticias/campus-e-comunidade/docente-do-tecnico-nomeado-professor-honorario-da-universidade-estatal-de-s-petersburgo/

63 *Laudatio* presented at the ceremony of *Doctor Honoris Causa* award to Prof. Vadim Yu. Kukushkin by the University of Lisbon, IST, October 14th, 2019.

64,65 Opening and closing sessions of the 5th CATSUS Workshop (virtual), 2020.

66,67 Opening and closing sessions of the 6th CATSUS Workshop (virtual), 2021.

68,69 Opening and closing sessions of the XXII International Symposium on Homogeneous Catalysis (ISHC), Faculty of Sciences of the University of Lisbon, July 24-29, 2022.

70 Historical evocation ("Elogio Histórico") of Professor/Academician J.J.R. Fraústo da Silva, Academy of Sciences of Lisbon, November 17th, 2023 (see V.62).

71 Presentation of the Scientific Council Evaluation of the 2022 Activities Report of the Academy of Sciences of Lisbon, March 7th, 2023 (General Plenary Session of the Academy).

72 Brief evocations of recently deceased Foreign Corresponding Members (chemists): Georgiy Shul´pin and Hugh Burrows (Class of Sciences session, March 16th, 2023, videoconference).

73 "Fraústo da Silva and the Two Cultures: Biographic Note", presented at the Fraústo da Silva Tribute Session, XXVIII National Meeting of the Portuguese Chemical Society, Aveiro, July 26th, 2023.

74 "The Portuguese Electrochemical Society: four decades fostering Electrochemistry", to be presented at the XXV Meeting of the Portuguese Electrochemical Society, Coimbra, Aug. 30th - Sept 1st, 2023.

PRESENTATIONS (ORALLY OR BY POSTER) AT CONFERENCES OR SYMPOSIA

Delivered in-presence (unless indicated otherwise)

1 J. Chatt, A.J.L. Pombeiro*, R.L. Richards, C. Royston, "The Reactions of Isonitrile Complexes of Molybdenum(0) and Tungsten(0) with Alkylating Reagents", Internat. Symposium on Metals in Organic Chemistry, Venice, Italy, 1974, B8.

2 A.J.L. Pombeiro*, R.L. Richards, J. Chatt, "Studies on the 'Mo(dppe)2' Nitrogen Fixation Metal Site" (in Portuguese), First National Chemical Meeting, Lisbon, 1978, 4.10.2

3 A.J.L. Pombeiro*, J. Chatt, R.L. Richards, "Fluxional Behaviour of Carbyne,Carbene and Hydride Complexes with a Nitrogen Fixation Metal Site" (in Portuguese), Second National Chemical Meeting, Porto, 1979, 3A1.4.

4 J. Chatt, A.J.L. Pombeiro*, R.L. Richards, "The Substitution Reactions of Dinitrogen Complexes of Molybdenum and Tungsten with Isonitriles", Ninth Internat. Conference on Organometallic Chemistry, Dijon, France, 1979, D47.

5 A.J.L. Pombeiro*, R.L. Richards, "Diazadiene and Isonitrile Complexes of Mo" (in Portuguese), Third National Chemical Meeting, Coimbra, 1980, 10B3.2

6 A.J.L. Pombeiro*, C.J. Pickett, R.L. Richards, S.A. Sango Koya, "MechanisticStudies on the Displacement of Dinitrogen by Isocyanides in Complexes of Mo(0). Evidence for the First Mixed Complex of Dinitrogen and Isocyanide", Third National Chemical Meeting, Coimbra, 1980, 10P13.

7 A.J.L. Pombeiro*, R.L. Richards, "Isonitrile Derived Carbynes at NitrogenFixation Metal Sites", XXI Internat. Conference on Coordination Chemistry, Toulouse, 1980, 457.

8 A.J.L. Pombeiro*, "Abiological Chemistry in the Interpretation of the Enzymatic Nitrogen Fixation: Mechanistic Hypotheses on the Natural Reduction of Isocyanide and Dinitrogen" (in Portuguese), presented at the Academy of Sciences of Lisbon, October 9th, 1980 (see II.17).

9 A.J.L. Pombeiro*, M.F.N.N. Carvalho, "Diazadiene and Isocyanide Chlorocomplexes of Tungsten(II, IV or V)" (in Portuguese), Fourth National Chemical Meeting, Lisbon, 1981, PC 141.

10 M.B.M. Baptista, A.J.L. Pombeiro*, "Preparation of AlkylisocyanideComplexes of Iron(II), *trans*-[FeH(CNR)(dppe)$_2$]A with a Dinitrogen Binding Site" (in Portuguese), Fourth National Chemical Meeting, Lisbon, 1981, PC 133.

11 M.F.N.N. Carvalho, A.J.L. Pombeiro*, R.L. Richards, "Preparation ofCarbyne Complexes of Rhenium, *trans*-[ReCl(CNHR)(dppe)$_2$]A (R = Me, Bu^t)"(in Portuguese), Fourth National Chemical Meeting , Lisbon, 1981, PC 153.

12 A.J.L. Pombeiro*, "Studies on a Novel Route for Carbyne-Type Ligands through Attack of Iminium Halide to a Dinitrogen Monophosphine Complex, *cis*-[Mo(N$_2$)$_2$(PMe$_2$Ph)$_4$]", presented at the Academy of Sciences of Lisbon, May 7th, 1981 (see II.22).

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791 N. Reis Conceição, A.G. Mahmoud, M.F.C. Guedes da Silva, A.J.L. Pombeiro, "Functionalized 1,3,5-Triaza-7-phosphaadamantane Ligands and Their Cu(I) /Cu(II) and Zn(II) Metal Complexes: Synthesis and Characterization", XIII International School of Organometallic Chemistry (XIII ISOC) (New Directions and Perspectives on Organometallic Chemistry) (virtual), University of Camerino, Italy, Sept. 1-3, 2021, No.7, p.24 (poster presented by NRC).

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798 N. Reis Conceição, B. Nobre, A. Karmakar, K.T. Mahmudov, M.F.C. Guedes da Silva, A.J.L. Pombeiro, "A Zn-MOF-catalyzed Knoevenagel condensation in $scCO_2$", 6th CATSUS Workshop (virtual), Instituto Superior Técnico, Lisbon, December 6, 2021, OP13, p.24 (oral, presented by NRC).

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800 M. Sutradhar, T.R. Barman, L.M.D.R.S. Martins, M.F.C. Guedes da Silva, A.J.L. Pombeiro, "Oxidation reactions catalyzed by oxidovanadium(V)-aroylhydrazone complexes", XI National Meeting on Catalysis and Porous Materials and II Meeting of the Carbon Group of the Portuguese Chemical Society (virtual), University of Aveiro, Aveiro, December 9-10, 2021, P1 (poster presented by MS).

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804 M.M.A. Soliman, M.N. Kopylovich, E.C.B.A. Alegria, A.P.C. Ribeiro, A.M. Ferraria, A.M. Botelho do Rego, L.M.M. Correia, M.S. Saraiva, A.J.L. Pombeiro, "Distinctive morphologies of iron-based composites prepared mechanochemically: opportunities for smart applications", Smart and Intelligent Composite Structures for Innovative Industrial Applications (SICS 2021) (virtual), Lavrion Technological Cultural Park, Attica, Greece, December 8-9, 2021 (oral, presented by MMAS).

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806 A. Karmakar, A. Paul, A.J.L. Pombeiro, "Adsorptive removal of organic dyes from wastewater using polyaromatic group containing Zn(II)-based coordination polymers", CQE Days 2022, Faculty of Sciences of the University of Lisbon, May 26-27, 2022, O10, p.28 (oral, presented by AK).

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the College of Chemistry of the University of Lisbon: Forging Bonds, Rectory of the University of Lisbon, July 12-14, 2022, P26, p.62 (poster, presented by JRPB).

819 A.M. Faisca Phillips, A.J.L. Pombeiro, "Synthesis of Unnatural Conformationally Constrained Amino Acids by Cross-Dehydrogenative Coupling", 5th Meeting of the College of Chemistry of the University of Lisbon: Forging Bonds, Rectory of the University of Lisbon, July 12-14, 2022, P64, p.100 (poster, presented by AMFP).

820 A.G. Mahmoud, M.F.C. Guedes da Silva, A.J.L. Pombeiro, "Complexes of lower rim functionalized PTA derivatives: Synthesis, characterization and application in catalysis", XXII International Symposium on Homogeneous Catalysis (ISHC), Faculty of Sciences of the University of Lisbon, July 24-29, 2022, O29 (oral, presented by AGM).

821 A. Paul, A.J.L. Pombeiro, "Versatility of amide Functionalized Coordination Polymers", XXII International Symposium on Homogeneous Catalysis (ISHC), Faculty of Sciences of the University of Lisbon, July 24-29, 2022, O30 (oral, presented by AP).

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827 A.V. Gurbanov, V.A. Aliyeva, K.T. Mahmudov, M.F.C. Guedes da Silva, A.J.L. Pombeiro, "Construction of copper(II)-arylhydrazonate complexes through auxiliary ligand alteration: catalytic activity in azide–alkyne cycloaddition reaction", XXII International Symposium on Homogeneous Catalysis (ISHC), Faculty of Sciences of the University of Lisbon, July 24-29, 2022, P10 (poster, presented by AVG).

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Symposium on Homogeneous Catalysis (ISHC), Faculty of Sciences of the University of Lisbon, July 24-29, 2022, P18 (poster, presented by OVN).

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831 M. Sutradhar, H.M. Lapa, E.C.B.A. Alegria, M.F.C. Guedes da Silva, A.J.L. Pombeiro, "Oxidovanadium(V) Complexes: Ultrasound and photo-assisted oxidation of toluene and benzyl alcohol", XXII International Symposium on Homogeneous Catalysis (ISHC), Faculty of Sciences of the University of Lisbon, July 24-29, 2022, P34 (poster, presented by MS).

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834 A. Karmakar, A.J.L. Pombeiro, "Amide Functionalized Coordination Polymers for One-pot Tandem Reactions", XXII International Symposium on Homogeneous Catalysis (ISHC), Faculty of Sciences of the University of Lisbon, July 24-29, 2022, P64 (poster, presented by AK).

835 A.R. Rutigliano, V.A. Aliyeva, A.B. Paninho, A.V.M. Nunes, A. Karmakar, E. Gallo, K.T. Mahmudov, A.J.L. Pombeiro, "Halogen bonding in Zn(II) and Cd(II) complexes: catalytic application in the cycloaddition of CO_2 to epoxides", XXII International Symposium on Homogeneous Catalysis (ISHC), Faculty of Sciences of the University of Lisbon, July 24-29, 2022, P66 (poster, presented by VAA).

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