

# CURRICULUM VITAE



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## UNIVERSITY DIPLOMAS :

- Engineer of l'Ecole Nationale Supérieure de Chimie de Paris (**Major**) 1978
- Doctorat ès Sciences (PhD in Physical Sciences) University of PARIS 6-Pierre et Marie Curie 1981

## CAREER IN NATIONAL EDUCATION

- Attaché de Recherche CNRS (1978-1982)
- Chargé de Recherche CNRS (1982-1988)
- Director of Research II CNRS (1988-1995)
- Professor at l'Ecole Polytechnique (1991-2003)
- Director of Research I CNRS (1995-2006)
- Director of Research Exceptional Class CNRS (2006-2011)
- Director of the laboratory « Chimie de la Matière Condensée » (1999---
- Co-Director of the laboratory « Chimie de la Matière Condensée de Paris » UMR CNRS 7574 (2000-2004)
- Director of the laboratory « Chimie de la Matière Condensée de Paris » UMR CNRS 7574 (2005-2013)
- **Professor at the Collège de France**, Chaire de « Chimie des Matériaux Hybrides » (2011---

## NATIONAL ADMINISTRATIVE RESPONSABILITIES

- Member of the 33th section (Materials) of 'Commission de Spécialistes', Univ-Paris-VI, (1996-2008)
- Member of the 19th section (Materials) of 'Comité National du CNRS' (2000-2008)
- Membre of the Rerearch Directory of the section 15 of 'Comité National du CNRS' (2005-2008)
- Member of the 'Directoire de la Recherche', expert for chemistry, University-Paris VI, (2000-2006)

## NATIONAL AND INTERNATIONAL SCIENTIFIC RESPONSABILITIES

- Scientific expert for Materials Science of CNRS-Industry CRIN Cell (1991-1994)
- Scientific expert for Sol-gel chemistry at the Center of Atomic Energy Le Ripault (since 2001)
- Scientific expert for DGA in Materials Chemistry since 2007
- Member of the Scientific Advisory Comitee of "SOLEIL", the new French synchrotron
- Head of the Nanochemistry Division C'Nano Ile de France (2006-2009)
- Member of the Board «Maison de la Chimie » (2008---
- Member of the Scientific council of AC Nanosciences-Nanostructures (2002-2004)
- Member of the Scientific council of 'Action Matériaux-CNRS' (2004)
- Member of the Scientific council of 'ANR « Nanomatériaux » and Member of the directory' (2005-2006)
- Scientific coordinator of the OFTA group on "Hybrid Materials" (1993-1996)
- **Book** " Matériaux Hybrides" Arago 17, Mai 1996, Ed Masson
- Scientific coordinator of the OFTA group on "Biomimetism and Materials " (1998- 2001)
- **Book** "Biomimétisme et Matériaux " Arago 25 , 2001, Ed Tech et Doc.
- Editor in Chief of the international Journal "New Journal of Chemistry "(2000-2004)
- Member of the Editorial Board of: "Chemical Communication" (2000-2004)

- Member of the Advisory Editorial Board of: *"Journal of Materials Chemistry"* (2005-2012)  
*"New Journal of Chemistry"* (2005- 2009)  
*"Chemistry of Materials "* (2004---)  
*"Chemical Society Reviews "* (2011---)
- President of the France-Berkeley Foundation (2010---)

#### SCIENTIFIC ORGANIZATION or CO-ORGANIZATION OF NATIONAL SYMPOSIA

- "Matériaux Intelligents" (Société Française de Physique, Rennes, 1994).
- "Matériaux Hybrides" Société Chimique de France (Bordeaux, 1997).
- "Nanosciences" Société Chimique de France (Rennes, 2000).
- "Les Journées Sol-Gel du CEA" (Tours, 2004, 2006, 2007).
- "Matériaux Fonctionnels Avancés: Des Nanocéramiques aux Hybrides" (Matériaux 2006, Dijon)
- "N<sup>3</sup> Nanochimie, Nanomatériaux, Nanostructures » (Matériaux 2010, Nantes)

#### SCIENTIFIC ORGANIZATION or CO-ORGANIZATION OF INTERNATIONAL SYMPOSIA

- 7<sup>th</sup> International Workshop on Glasses and Ceramics from Gels (Paris, 1993)
- 1<sup>st</sup> European Workshop on Hybrid Organic-Inorganic Materials (Bierville, France, 1993):
- "Better Ceramics Through Chemistry VI", Materials Research Society (San-Francisco, 1994)
- "B. C. T. C. VII, Hybrid Materials", Materials Research Society, (San-Francisco 1996).
- "Insights into New Materials" World Congress of the *AICHE*, (1996).
- "Hybrid Materials", Materials Research Society, (San-Francisco, 1998).
- REU International meeting on "Advanced Materials", REU NSF-CNRS (Gainesville 1999).
- "Hybrid Organic-Inorganic Materials", Materials Research Society, (San-Francisco, 2000).
- REU International meeting on "Advanced Materials", REU NSF-CNRS (Paris, 2000).
- "Hybrid Organic-Inorganic Materials", Materials Research Society, (San-Francisco, 2002).
- 3 *EUROMAT* Symposia on "Biomimetic and Bioinspired approaches to Functional Inorganic and Hybrid Materials", (Lausanne, 2003).
- "Hybrid Materials", Materials Research Society, (Boston, 2004).
- "Functional Hybrid Materials: Nanoscale Objects to Nanostructured Inorganic and Hybrid Materials", European-Materials Research Society, (Strasbourg, 2005).
- "Hybrid Materials", Materials Research Society, (San Francisco, 2007).
- 1<sup>st</sup> International Conference on "Hybrid Materials", (Tours-France, 2009)
- International Conference on "Hybrid Materials II", (Strasbourg-France, 2011)
- " Electronic Organic-Inorganic Hybrid Nanomaterials: Synthesis and Device Physics", Materials Research Society, (San Francisco, 2011).

#### EDITION of BOOKS and JOURNAL SPECIAL ISSUES

- Proceedings of the 1<sup>st</sup> European Workshop on Hybrid Organic-Inorganic Materials 1993.
- "Better Ceramics Through Chemistry VI", Materials Research Society Symposium Proceedings, vol 346, 1994.
- Numéro special du New Journal of Chemistry, Hybrid Organic-Inorganic Materials, Oct 1994 (Guest Editor)
- "Better Ceramics Through Chemistry VII" Hybrid O-I Materials, Materials Research Society Symposium Proceedings, vol 435, 1996
- Numéro spécial du Journal of Sol-gel Science and Technology, Organic-Inorganic Hybrid Materials. 1995.
- Hybrid O-I Materials, Materials Research Society Symposium Proceedings, vol 539, 1998.
- "Hybrid Organic-Inorganic Materials", Materials Research Society Symposium Proceedings, vol 528, 2000.
- "Hybrid Organic-Inorganic Materials", Materials Research Society Symposium Proceedings, vol 726 , 2002.
- "Functional Hybrid Organic-Inorganic Materials", Wiley VCH , vol XVII, 2003, ISBN 3-527-304843 2002.
- "Hybrid Organic-Inorganic Materials", Materials Research Society Symposium Proceedings, vol 847 , 2004.
- Themed Issue on "Functional Hybrid Materials", *J. Mater. Chem.*, 215, vol 35-36, 2005.
- Special Issue of the Symposium "Functional Hybrid Materials: Nanoscale Objects to Nanostructured Inorganic and Hybrid Materials", in *Progress in Solid State Chemistry* (33), 2005.
- "Organic-Inorganic Hybrid Materials", Materials Research Society Symposium Proceedings, VI.1007, 2007.
- Special Issue on " *Recent progress made in Hybrid Materials Science* ", *Chem. Soc. Rev.*, 2011.

#### MEMBER OF SCIENTIFIC COMITEE in INTERNATIONAL MEETINGS

- 6<sup>th</sup> International Workshop on Glasses and Ceramics from Gels (Séville, Espagne, october 1991)
- Perspectives in Inorganic Chemistry, (Brixen Italy, 1995)
- Perspectives in Inorganic Chemistry, (Brixen Italy, 1996)
- Perspectives in Inorganic Chemistry, (Brixen Italy, 1997)
- SPIE International Symposium "Optical Devices for Fiber Communication", Boston, september 1999
- 13<sup>th</sup> International Zeolite Conference (Montpellier, France, July 8–13, 2001)
- Silica –2001, Mulhouse Sept 2001 France
- XIV International Symposium of Organosilicon Chemistry, Würzburg, july 2005

International Mesoporous Materials Symposium, Cap Town, May 2004  
Symposium "Nanoporous Materials IV" June 2005 Niagara Falls, Canada.  
International Mesoporous Materials Symposium, Shanghai, Sept 2006.  
International Materials Symposium CIMTEC, Sicily, July 2006.  
Essonne' European School on Nanosciences and Nanotechnologies, Grenoble Sept 2005-2006-2007-2008  
Nanoporous V conference, Vancouver 2008.  
EUCHEM 2008 Conference, Turin, Italy.  
International Advisory Board of the International Sol-Gel conference, Hangzhou, China, 2011

#### **SCIENTIFIC DISTINCTIONS AND AWARDS**

- Recipient (1978) of the Major Medal of the ENSCP
- Recipient (1983) of a NATO Fellowship
- Laureate (1988) of the IBM Prize for « Materials Science »
- Laureate (1994) of the Prize from the French Chemical Society (Solid State Chemistry Division)
- Recipient (1995) of the CNRS Silver Medal
- Laureate (2000) of the Yvan Pueches Prize of the French Academy of sciences
- Laureate (2000) of the ADFAC –University of Paris VI Prize for research valorisation
- Recipient (2007) of the Lavoisier Medal CEA Le Ripault
- Catalan-Sabatier Award of the Real Sociedad Española de Química (2007)
- Laureate (2008) of the Gay-Lussac-Humboldt Award of the Alexander von Humboldt Foundation.
- Lecturer (2008) of the Otto-Warburg-Vorlesung, University of Bayreuth
- Guest Professor of the University of Jilin-China (2009-)
- Guest Professor of the University of Wuhan-China (2009-)
- Recipient (2009) of the P. Süe Award of the French Chemical Society
- Recipient (2010) of the Institut Français du Pétrole Award of the French Academy of Sciences
- Nominated Foreign Academician of the Real Academia Nacional de Farmacia, Spain 2011.
- Nominated Academician of the European Academia of Sciences, 2010.
- Nominated Academician of the French Académie of Sciences, 2011.
- Nominated Academician of Academia Europaea, 2011.

#### **TECHNOLOGICAL TRANSFERT, INDUSTRIAL VALORISATION**

- Basic research performed since 20 years on the field of hybrid materials yield to numerous applications (for example see the patents and the review article on applications, *J. Mater Chem.* 2005- *CHEM. SOC. REV.* 2011)
- Leader of many European and industrial contracts and grants (*Rhodia, Saint-Gobain, IFP, Corning, Protex, Rhône-Poulenc, Bouygès, Lafarge, l'Oréal, CEA, EADS, Sumitomo, Air liquide, Materis, Solvay...*),
- High valorisation of the research on Hybrid Materials (co-inventor of 54 patents).
- ADFAC-UPMC Award for Research valorisation for Hybrid Materials (2000)

#### **RESEARCH INTERESTS and FIELDS of EXPERTISE**

- \* **Soft chemistry based routes to nanostructured materials. Sustainable chemistry (chimie douce)**
- \* **Sol-Gel chemistry** from metal alkoxides precursors
- \* **Templated synthesis** of inorganic gels and **mesoporous coatings** (self-assembly)
- \* Designed construction of **hybrid organic-inorganic materials** (metal oxides based on Si, Sn, Ti, Zr ...)
- \* Optical, electrical and mechanical properties of hybrid materials
- \* **Bio-inspired approaches to hierarchically structured** inorganic and hybrid organic-inorganic materials
- \* **Hybrid Biomaterials**
- \* **Applications of hybrids** in the domains of environment, health and energy.

#### **SUMMARY of PRODUCTIONS**

More than 380 Publications in journals, 15 Book Chapters, more than 50 Patents: 14 Books as Editor or Co-editor, more than 280 Invited Conferences.