

Rabah BOUKHERROUB, Director of Research at the National Centre for Scientific Research (CNRS)

*Group leader at the Institute of Electronics, Microelectronics and Nanotechnology
Associate Editor, ACS Applied Materials & Interfaces since 06/2014
Adjunct Professor, Shandong University, Jinan, China (2008-2013)
Adjunct Professor, China University of Petroleum, Qingdao, China (2016-*

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Education

2002: Habilitation in chemistry of materials, University of Versailles, France
1990 - 1993: PhD in organic and organometallic chemistry (highest distinction), Paul Sabatier University, Toulouse, France
1989 - 1990: Masters in organic chemistry with honors, Paul Sabatier University, Toulouse, France
1985 – 1989: Bachelor of Science in Chemistry (ranked second over forty students), University of Science and Technology Houari Boumediene, Algiers, Algeria

Research Experience

Since Jan. 2015: CNRS Research Director and Group leader at the Institute of Electronics, Microelectronics and Nanotechnology (IEMN), Lille, France
Oct. 2005 – Dec. 2014: CNRS Research Director and Group leader at the Interdisciplinary Research Institute (IRI), Lille, France
Oct. 2003 - Oct. 2005: CNRS Research Scientist and Group leader at the Interdisciplinary Research Institute (IRI), Lille, France
Oct. 2001 – Oct. 2003: Research Scientist at PMC, Ecole Polytechnique, Palaiseau, France
April 1999, Dec-Jan 2000, April 2001: Collaborative research with Dr. P. Allongue (collaboration CNRS-NRC): Electrochemical characterization of organic monolayers on Si(111) surfaces (capacitance and electron transfer studies).
Physique des Liquides et Electrochimie, Université P. & M. Curie, Paris, France
Feb. – March 2001: Collaborative research with Pr. N. Koshida: Organic modifications of porous silicon light-emitting devices.
Tokyo University of Agriculture and Technology, Koganei, Tokyo 184, Japan
Apr. 98 – Oct. 2001: Assistant Research Officer at the National Research Council, Ottawa, Canada

- Organic modifications of semiconductor surfaces for potential applications in the field of DNA and protein chips and for building hybrid materials.

1996 - Apr. 98: Postdoctoral Fellow at McMaster University, Hamilton, Ontario, Canada

- Development of various compounds as inhibitors of photochemically-induced yellowing in lignin-rich paper, through the use of UV- screening, radical scavenging, or quinone scavenging methodologies.

- Photochemistry of alkoxystilbenes in solution and polymeric-bound alkoxystilbenes. Models for stilbenes in lignin-rich papers

- Mechanistic studies and detection of reactive intermediates (silenes).

Nov. 94 - Dec. 95: Postdoctoral fellow at Université Paul Sabatier, Toulouse, France.

-Synthesis of functionalized heterocyclopentanes and new racemic (di) phosphines and their application in organic synthesis and asymmetric catalysis. New methods based on cyclometallation reactions of dienes and diynes directly bound to various elements of 14 and 15 group (phosphorus, silicon, germanium and tin) with transition metals such as zirconium and titanium were applied.

-Photochemistry of silylated dienes in solution.

Sep. 94 - Nov. 94: Visiting Scientist at National Research Council, Bologna, Italy.

-Activation of the silicon-hydrogen bond using palladium dichloride: a versatile system for the synthesis of silylethers, halides and alkanes from the corresponding alcohols, and its application for the reduction of alkylhalides to alkanes.

Sep. 93 - Jul. 94: Postdoctoral position at University Paul Sabatier, Toulouse, France.

-Synthesis of 3 C-silylated phospholenes using a modified McCormack reaction.

-Organosilanes as reducing agents: Application of organosilanes (R_3SiH) as reducing agents of different organic functions (ketones, aldehydes, nitriles...) catalyzed by palladium dichloride.

Sep. 90 - Jul. 93: PhD in chemistry, Paul Sabatier University, Toulouse, France.

-Silole and germacyclopentenes: synthesis and properties of functionalized derivatives on the carbon, silicon, and germanium.

-Preparation of 3-(cyclicamino)-1,1-diphenylsilacyclopentanes and their pharmaceutical formulations as serotonin antagonists.

-Synthesis of new silacyclopentenes precursors of organosilicon polymers.

Awards and Scholarships

2014: A 4-year Research Excellence Award (PES) from the CNRS

2011: Co-lauréat du Prix de l'Innovation 2011, Fondation Ecole Polytechnique

2010: A 4-year Research Excellence Award (PES) from the CNRS

2008: Best Talk of the Day Award, Porous Semiconductors Science and Technology (PSST 2008)

2000: National Research Council Canada (NRCC) Outstanding Achievement Award

1998-1999: Natural Sciences and Engineering Research Council of Canada (NSERC) fellowship

1989-1993: Postgraduate Scholarship from the French Government

1985-1989: Scholarship from the Algerian Ministry of Education

Publications (H Index scopus: 46), Total citations: 8300

<http://scholar.google.com/citations?user=ouWAEXAAAAAJ&hl=fr> (H index: 51, total citations: 10062)

- > 390 publications
- > 148 seminars and invited conferences
- 10 patents
- 29 book chapters

Service and Activities

- Associate Editor, ACS Applied Materials & Interfaces (since 06/2015)
- Associate Editor, Reviews in Advanced Sciences and Engineering (11/2012-03/2015)
- Editorial Board Member of the E-Journal of Chemistry, Materials Chemistry section
- Editorial Board Member of Pure and Applied Chemical Sciences (01/2013)
- Editorial Board Member of the Journal of Chemical and Biological Interfaces
- Editorial Board Member of the Journal of Nanotechnology in Diagnosis and Treatment
- Co-editor ECS Transactions Volume 33, Las Vegas, NV, October 10-15, 2010, 218th ECS Meeting
- Lead editor of the ECS Transactions, Volume 50, Issue 54, Honolulu, HI, October 7-12, 2012, 222nd ECS Meeting
- Co-editor ECS Transactions Volume 69, Phoenix, AZ, October 11-15, 2015, 228th ECS Meeting
- Co-editor ECS Transactions Volume 73, Honolulu, HI, October 2-7, 2016, 230th ECS Meeting
- Co-editor:
 - 1-**Book title:** Solar Cell Nanotechnology (500 pages)
Editors: Atul Tiwari, Rabah Boukherroub & Maheshwar Sharon
Publisher: Co-published by John Wiley & Sons, Inc. Hoboken, New Jersey, and Scrivener Publishing LLC, Salem, Massachusetts
ISBN 978-1-118-68625-6
Copyright © 2014 by Scrivener Publishing LLC. All rights reserved
 - 2-**Book title:** Introduction to Plasmonics: Advances and Applications
Editors: Sabine Szunerits and Rabah Boukherroub
Publisher: Pan Stanford Publishing
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ISBN 978-981-4613-12-5 (Hardcover), 978-981-4613-13-2 (eBook)
 - 3- **Book title:** Encyclopedia of Nanotechnology
Editor: Bharat Bhushan
Section editors: R. Boukherroub, S. Szunerits, A. Toma, R. Proietti
Section: Nanoplasmonics
Publisher: Springer
To be published in 2016
 - 4- **Book title:** Functionalized Nanomaterials for the Management of Microbial Infection

Editors: Rabah Boukherroub, Sabine Szunerits and Djamel Drider

Publisher: Elsevier

To be published in 2017

5- **Book title:** Nanocarbons for Electroanalysis

Editors: Sabine Szunerits, Rabah Boukherroub, Aloson Downard, Jun-Jie Zhu, Greg M. Swain

Publisher: John Wiley & Sons, Ltd.

To be published in 2017

- Secretary/treasurer of the European section of electrochemistry (2007-2014)
- Member of the Electrochemical Society (since 2001)
- Expert for the Observatory for Micro and Nano Technologies (OMNT) (2008-2010)
- Member of the steering committee of the research network (GDR) "Nanofilms, Nanotubes Semi-Conducteurs" (2006-2013)
- Member and National representative for African Network for Solar Energy (ANSOLE)
- Member of the Strategic Orientation Committee of the Research Institute for Materials Science and Engineering of University of Mons
- Member of the Scientific and Technical Strategic Committee (COST) of the Plateforme d'Innovation (PFI) Nouvelles Vagues
- Member of the Scientific Council of the University Lille1 since (10/2014-04/2016)
- Co-Chair of the Heinz Gerischer award 2014
- Member of the steering committee of the research network (GDR) "Bio-Ingénierie des Interfaces, Elaboration, caractérisation et applications"

- Advisory board member

- 1st German-French Summer School on Electrochemistry and Nanotechnologies, September 5-10, 2004, Porquerolles, France
- 2nd German-French Summer School on Electrochemistry and Nanotechnologies, September 2-7, 2007, Lozari, Corsica, France
- 3rd German-French Summer School on Electrochemistry and Nanotechnologies, September 18-23, 2011, Porquerolles, France
- ICNT2013, Third Euro-India International Conference on Nanomedicine and Tissue Engineering, August 9-11, 2013, Kottayam, Kerala, India
- Global Graphene Forum, European Advanced Materials Congress, 23-25 August 2016, M/S Mariella, Viking Line, Stockholm, Sweden

- Member of the scientific committee

- First International Conference on Thin Films and Porous Materials, May 19-22/2008, Algiers, Algeria
- Summer school "Nano-objects in living cells: from physics to physiology", September 1-4, 2008, Villeneuve d'Ascq, France
- Ecole thématique : "Fonctionnalisation moléculaire des Carbones : méthodes expérimentales, caractérisations et applications", Dinard 9 au 13 mai 2011.
- Plenary workshop of the GdR 2974, October 17-21, 2011, Porquerolles, France

- President of the scientific committee, 6^{ème} Forum de Béjaïa « l'Université et le monde productif », 1- 4 Juillet 2012, Campus Aboudaou, Université de Béjaïa, Algérie
- International Conference on Nanomaterials and their Applications CINA 2012, 05-06/12/2012, Université 20 Août 1955, Skikda, Algérie
- Workshop IDEMAT, Centre franco-sibérien de formation et de recherche, 25-28 juin 2013, Institut des Sciences Chimiques de Rennes
- The 2013 International Conference on Advances in Nano Research (ICANR13), 25-28 August 2013, COEX, Seoul, Korea
- International Conference: Nanostructures for Sensing & Energy Storage, March 16-19, 2014, Algiers, Algeria
- International Conference on Spectroscopy and Applications ICSA 2014, May 2-4, 2014, Hammamet, Tunisia
- 1^{ères} journées plénières du GDR Bio-Ingénierie des Interfaces, Elaboration, caractérisation et applications (GDR 3751), 29 & 30 juin 2016, Ecole Centrale de Lyon (Ecully)
- 1st International workshop “NanoBio Surfaces and Interfaces in Healthcare and Science”, Sept 27th and 28th, 2016, Enschede, Netherlands
- 2016 International Conference of Physical Chemistry, ROMPHYSICHEM 21-24, 2016, University of Galati, Romania

- Member of the organizing committee

- Summer school on semiconductor nanowires, 3SN'2008, 15-20 June 2008, Roscoff, France
- Summer school “Nano-objects in living cells: from physics to physiology”, 1-4 September 2008, Villeneuve d'Ascq.
- Lead organizer of the Symposium D6-Pits and Pores 4: New Materials and Applications. In Memory of Ulrich Göesele, Las Vegas, NV, October 10 - October 15, 2010, 218th ECS Meeting
- Thematic days on nanowires and applications" of the GDR "Semiconductor Nanowires and Nanotubes", Villeneuve d'Ascq, January 20-21, 2011
- 2nd Workshop of the Plasmobio Intereg IV research program, “Frontiers in Biological Detection”, 21-23 May 2012, Campus of Sciences and Medecine, University of Mons, Belgium
- Lead organizer of the Symposium D7-Pits and Pores 5: New Materials and Applications. In Honor of David Lockwood, Honolulu, Hawaii, October 7 - October 12, 2012, 222nd ECS Meeting
- Organizing Committee Member, 2nd International Conference and Exhibition on Biosensors & Bioelectronics, June 17-19, 2013 Hilton Chicago/Northbrook, USA
- Organizing Committee Member, 3rd International Conference and Exhibition on Biosensors & Bioelectronics, August 11-13, 2014, San Antonio, USA

- Organizing committee member for the World Congress and Expo on Nanotechnology and Materials Science (Nanotechnology-2015), April 13-15, 2015, Dubai, UAE
- Co-organizer of the Symposium C06-Pits and Pores 6: Nanomaterials-Fabrication Processes, Properties, and Applications, In memory of Yukio H. Ogata, 228th ECS Meeting - 2015 Oct. 11-16 - Phoenix, AZ, USA
- Organizing committee member, World Congress and Expo on Materials Science & Polymer Engineering (Materials Science-2015), November 26-28, 2015, Dubai, UAE
- Organizing committee member, Global Nanotechnology Congress and Expo (Nanotech-2016), April 21-23, 2016, Dubai, UAE
- Organizing committee member, Global Congress & Expo On Materials Science and Nanoscience (Materials Science-2016), October 24-26, 2016 at Dubai, UAE.
- Advisory/organizing board member, Global Graphene Forum, 23-25 August 2016, Stockholm, Sweden
- ElecNano, Nanomaterials for sensing and energy driven applications, Polytech'Lille, Villeneuve d'Ascq, May 23-25, 2016.
- Co-organizer of the Symposium C07-Pits and Pores 7: Nanomaterials-Fabrication Processes, Properties, and Applications, 230th ECS Meeting - 2016 Oct. 9-14 - Honolulu, HI, USA

- Program Committee Member

- French Symposium on Emerging Technologies for Micro-nanofabrication (JNTE 08), November 19-21, 2008, Toulouse, France
- SPIE Smart Materials, Nano- and Micro-Smart Systems Symposium, 9-12 December 2008, RMIT University, Melbourne Australia.
- French Symposium on Emerging Technologies for Micro-nanofabrication (JNTE 10), November 24-26, 2010, Palaiseau, France
- French Symposium on Emerging Technologies for Micro-nanofabrication (JNTE'2013), May 21-23, 2013, Evian, France
- French Symposium on Emerging Technologies for Micro-nanofabrication (JNTE'2015), November 2015, Lyon, France

Research interests

- Nanomaterials
- Surface chemistry
- Electrochemistry
- Biosensors & Lab-on-Chip devices
- Nanomedicine
- Photocatalysis