

Jean-Manuel Raimundo

Full Professor, Aix Marseille Université – CINaM UMR CNRS 7325

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Research thematic: Supramolecular chemistry, organic chemistry, surface chemistry, physical chemistry applied to biosensors, bioelectronic, healthcare, nanomedicine applications, drug delivery.

- 84 publications in peer-reviewed journals, 5 Patents (with PCT), 1 plenary talk international conference, 30 international invited talks at conferences and workshops, 52 oral communications (50% at international conferences and workshops), 90 posters (30 % at international conferences and workshops).

Education

- *October 10, 2011:* Research Habilitation Degree (HDR), Université de la Méditerranée.
- *October 21, 1999:* PhD in Organic Chemistry, Supervisor Dr J. Roncali (University of Angers, France) with Highest Honors
- *June 1996:* Master2 in Chemistry, University of Rennes 1, with honors
- *June 1995:* Master in Biochemistry, University of Rennes 1, with honors

Current positions

- *July 2020-* : Director of the Materials Engineering Department at Polytech'Marseille
- *September 2019-* : Full Professor, 1st Class (CINaM) UMR CNRS 7325.
- *January 2015-*: Head of the Molecular and Functional Materials Department at CINaM

Previous positions

- *September 2015-2019:* Full Professor, 2nd Class (CINaM) UMR CNRS 7325.
- *September 2012-December 2012:* Invited Professor at the International Center for Materials Nanoarchitectonics (MANA), National Institute for Materials Science, NIMS Tsukuba, Japan.
- *September 2008-August 2015:* Associate Professor ESIL Engineering School of Luminy (ESIL), UPR CNRS 3118
- *September 2007-September 2008:* CNRS Research Delegation UMR CNRS 6114 Marseille.
- *October 2002-September 2008:* Assistant Professor, University of Nice Sophia-Antipolis.
- *September 2001-September 2002:* Postdoctoral fellow Total Fina Elf (oil company).
- *January 2001-September 2001:* Assistant Lecturer, University of Angers.
- *November 1999-December 2000:* Postdoctoral fellow ETH Zurich (Diederich group).

Fellowship, distinctions and awards

- *2019:* Promoted Full professor 1st Class at National level (CNU).
- *2017:* Laureate of the "My innovation is" Prize.
- *2015:* Promoted Full Professor 2nd Class, Aix Marseille Université.
- *2015:* Recipient of PhD and research supervising award (PEDR)
- *2012:* Laureate of the NIMS fellowship, Invited Professor, Tsukuba Japon.
- *2012:* Recipient of scientific excellence award (PES)
- *2008:* Laureate of the Marseille's city researcher fellowship
- *1999:* Laureate of a ETHZ Research Council fellowship
- *1996:* Laureate of a PhD fellowship from Pays de la Loire and CNET France Telecom

Latest obtained grants

ANR Grants:

- 2016-2020 ANR SENCEI: "Versatile ultra-sensitive FET sensor: detection of Cesium in natural waters" Co-principal investigator (250 k€)
- 2011-2014 ANR SAGE III-V: "Self-assembled nanodielectrics on Ge and III-V materials" Co-principal investigator (167 k€)

SATT-SE Grants:

- 2018-2019 "Amphiphilic layers as organic dielectric" Co-principal investigator (209 k€)
- 2019-2020 "Innovative biocidal surfaces" Co-principal investigator (123 k€)
- 2018-2019 "Electrostimulable biocidal surfaces" Principal investigator (200 k€)
- 2016-2017 "Biocides surfaces" Principal investigator (30 k€)

AMIDEX Foundation Grant:

- 2018-2021 ELISA "Synthesis and antibacterial evaluation of ionic liquids derived of triaminophenaziums and their sulfur analogues" Partner (117 k€)

AMUTECH grant

- 2021-2022 Biomotion (25 k€)

Organization of scientific conferences and workshops

Since 2001 J.M. Raimundo organised, and was member of organising committees in, more than 12 conferences, workshops and scientific meetings. Highlighted international conferences:

- IX^{èmes} Journées Polymères Conducteurs (JPC), September 18-21, 2001 (La Pommeraye, Fr).
- 2^{èmes} Journées de Chimie France-Canada (JCPC'04) 29-30 avril 2004 (http://www.unice.fr/congres_france-canada/Programme.html).
- 2nd International Symposium on Biological Applications of Dendrimers (BioDendrimer2010) June 23-26, 2010 (Porqueolles, Fr) (<http://www.cinam.univ-mrs.fr/biodend2010/index.html>).
- Suprabio IV -next generation June 13-14, 2013 (Cassis, Fr) <http://www.cinam.univmrs.fr/site/suprabio/index.php>.
- 5- Collaborative Conference Organic Synthesis (CCOS'2017), March 17-13, 2017 (Hanoi, Vn) <http://2conf.org/Asia/organic-synthesis/committees/>.
- 6-Calix-2019 June 10-14, 2019, Cassis France, Co-Chairman, <http://www.cinam.univ-mrs.fr/calix2019/index.php?page=Accueil>).

Supervision of graduate students and postdoctoral fellows

- 9 Post-docs (+ 1 currently),
- 10 PhD (+ 2 PhD currently),
- 9 Masters 2.

PhD committees

Participate in 40 PhD committee (National and International) and 2 HDR committee

Teaching activities dedicated to Engineers (Annual)

- Annual teaching (course, tutorial and practical work HETD): Atomistic (12,5 h); Reactivity/Kinetic (22,5h) Organic Chem. (50 h); Spectroscopies (9 h); Advanced Organic Materials (77 h); Materials control & characterization (32 h); Innovative Fibers (20 h); Molecular Electronic (20 h) + Training (Engineers 3rd, 4th, 5th year), Tutored projects (variable hourly volume per year).

Current institutional responsibilities

- 2020-: Polytech'Marseille steering committee member (Engineering school)
- 2019-: Elected member at the National Council of Universities, Organic Chemistry (CNU 32)
- 2019-: Member of the CEVC commission (Contribution to the student life and campus)
- 2015-: Head of the IMMF chemistry department at CINaM UMR CNRS 7325 (<http://www.cinam.univ-mrs.fr/cinam/en/recherche/departements/>)
- 2015-: CINaM steering committee member
- 2015-: Invited member at the CINaM lab Council
- 2015-: Member of the CINaM scientific commission
- 2017-: Elected member of the Polytech'Marseille council
- 2015-: Member of the ANR TMOL committee
- 2012-: Expert at the DRTT for the south region (PACA) (Regional delegations for research and technology)

Commissions of trust

- 2014-: Editorial board of the American Association for Science and Technology, *Journal of Chemistry*.
- 2009-: National and European proposals reviewer: PHC, ANR, PICs, FRS-FNRS Belgium, Swiss National Science Foundation, AS Poland, Germany (Minerva foundation-MPG) ...

Current teaching responsibilities

- 2019-: Director of the Materials Department, Polytech'Marseille.
- 2010- : Master Advanced Materials Science and Nanotechnology (AMSN)) Responsible in Master 2 for the "Molecular Electronics" lecture at the USTH (Hanoi, Vietnam).
- 2012-: Responsible in Master 2 for the Innovative Textiles in Advanced Materials.

Membership of scientific societies

- 1996- : French Chemical Society SCF (n°20494)
- 2014-: Royal Society of Chemistry RSC (n°555584)

Relevant publications (last 5 years 2016-2020)

4 additional publications under submission: *Sens. Actuator B-Chem*, *ACS appl. Mater. Interfaces*, *N. J. Chem., Org. Lett.*

1. Phosphonium-ammonium-based di-cationic ionic liquids as antibacterial over the ESKAPE group. F. Brunel, C. Lautard, F. Garzino, J.-M. Raimundo, J.-M. Bolla, M. Camplo, *Bioorg. Med. Chem. Lett.* (2020), 30(18), 127389.
2. Control of the optical properties upon a reversible [2+2] cycloaddition of 3-((4-N,N-dibutylamino)-styryl)-3'-(dicyanovinyl)-bithiophene. H. Aboubakr, J.-M. Sotiropoulos, H. Brisset, J.-M. Raimundo, *Tetrahedron* (2020), 76(33), 131384.
3. Femtomolar detection of Cu²⁺ ions in solution using super-Nernstian FET-sensor with a lipid monolayer as top-gate dielectric. A. Kanaan, F. Brunel, J.-M. Raimundo, A. M. Charrier, *Sens. Actuator B-Chem.* (2020), 316, 128147.
4. Recent Electrochemical/Electrical Microfabricated Sensor Devices for Ionic and Polyionic Analytes. P. E. Martin Varguez, F. Brunel, J.-M. Raimundo, *ACS Omega* (2020), 5(10), 4733-4742.
5. Electrolyte-gated-organic field effect transistors functionalized by lipid monolayers with tunable pH sensitivity

for sensor applications. T. P. Nguy, R. Hayakawa, V. Kilinc, M. Petit, S. L. V. N. Yemini, S. L. V. Narayana; M. Higuchi, J.-M. Raimundo, A.-M. Charrier, Y. Wakayama, *Appl. Phys. Express* (**2020**), 13(1), 11005.

6. Biocidal compounds and systems. J.-M. Raimundo, M. Camplo, F. Garzino, F. Brunel, J.-M. Bolla, C. Lautard, *Eur. Pat. Appl.* (**2020**), EP 3590343 A1 20200108.

7. Biocidal compounds and systems. J.-M. Raimundo, M. Camplo, F. Garzino, F. Brunel, J.-M. Bolla, C. Lautard, *PCT Int. Appl.* (**2020**), WO 2020008000 A1 20200109

8. Novel and Innovative Interface as Potential Active Layer in Chem-FET Sensor Devices for the Specific Sensing of Cs⁺. V. Kilinc, C. Henry-de-Villeneuve, T. P. Nguy, Y. Wakayama, A.-M. Charrier, J.-M. Raimundo, *ACS Appl. Mater. Interfaces* (**2019**), 11(50), 47635-47641.

9. Combined SERS/DFT studies of push-pull chromophore self-assembled monolayers: insights into their surface orientation. V. Gadenne, B. Grenier, C. Praveen, P. Marsal, J. C. Valmalette, L. Patrone, J.-M. Raimundo, *Phys. Chem. Chem. Phys.* (**2019**), 21(46), 25865-25871.

10. Stable operation of water-gated organic field-effect transistor depending on channel flatness, electrode metals and surface treatment. T. P. Nguy, R. Hayakawa, V.; Kilinc, M. Petit, J.-M. Raimundo, A. M. Charrier, Y. Wakayama, *Jpn. J. Appl. Phys.* (**2019**), 58(SD), SDDH02.

11. Bacterial anti-adhesion activity based on the electrochemical properties of polymethacrylates bearing ferrocenyl pendant groups. R. W. Nguema Edzang, T. H. Duong, J.-F. Briand, M. Lejars, J.-M. Raimundo, C. Bressy, H. Brisset, *Biofouling* (**2018**), 34(9), 1055-1063.

12. Ultrathin Supported Lipid Monolayer with Unprecedented Mechanical and Dielectric Properties. A. Kenaan, R. El Zein, V. Kilinc, S. Lamant, J.-M. Raimundo, A.-M. Charrier, *Adv. Func. Mater.* (**2018**), 28(28), n/a.

13. Thiol-functionalization of Mn₅Ge₃ thin films. M. K. Schutz, M. Petit, L. Michez, A. Ranguis, G. Monier, C. Robert-Goumet, J.-M. Raimundo, *Appl. Surf. Science* (**2018**), 451, 191-197.

14. Antibacterial activities of mono-, di- and tri-substituted triphenylamine-based phosphonium ionic liquids. F. Brunel, C. Lautard, C. di Giorgio, F. Garzino, J.-M. Raimundo, J.-M. Bolla, M. Camplo, *Bioorg. Med. Chem. Lett.* (**2018**), 28(5), 926-929.

15. A red to blue series of push-pull dyes for NiO based p-DSSCs. R. Brisse, C. Praveen, V. Maffei, T. Bourgeteau, D. Tondelier, T. Berthelot, B. Geffroy, T. Gustavsson, J.-M. Raimundo, B. Jousset, *Sustain. Energy Fuels* (**2018**), 2(3), 648-654.

16. Synthesis and characterization of thiophene-based push-pull chromophores for tuning the electrical and optical properties of surfaces with controlled SAM formation. V. Malytskyi, V. Gadenne, Y. Ksari, L. Patrone, J.-M. Raimundo, *Tetrahedron* (**2017**), 73(39), 5738-5744.

17. Compounds for the detection, capture and/or separation of polluting gases. J.-M. Raimundo, V. Demetrio da Silva, P. Llewellyn, J. Rodriguez, O. Siri, *PCT Int. Appl.* (**2017**), WO 2017109178 A1 20170629.

18. Compounds for the detection, capture and/or separation of polluting gases. J.-M. Raimundo, V. Demetrio da Silva, P. Llewellyn, J. Rodriguez, O. Siri, *Eur. Pat. Appl.* (**2017**), EP 3184509 A1 20170628.

19. Amphiphilic molecules layers. A. Kenaan, A. M.; Charrier, S. Lavandier, J.-M. Raimundo, *PCT Int. Appl.* (**2017**), WO 2017064176 A1 20170420.

20. Amphiphilic molecules layers. A. Kenaan, A. M.; Charrier, S. Lavandier, J.-M. Raimundo, *Eur. Pat. Appl.* (**2017**), EP 3156046 A1 20170419.

21. Versatile synthesis of tunable *N,S*-bridged-[1.1.1.1]-cyclophanes promoted by ester functions. V. Malytskyi, V. Demetrio da Silva, O. Siri, M. Giorgi, J.-M. Raimundo, *Tetrahedron* (**2016**), 72(41), 6363-6367.

22. Antibacterial activities of fluorescent nano assembled triphenylamine phosphonium ionic liquids. F. Brunel, C. Lautard, F. Garzino, S. Giorgio, J.-M. Raimundo, J. M.; Bolla, M. Camplo, *Bioorg. Med. Chem. Lett.* (**2016**), 26(15), 3770-3773.

23. Subpicomolar Iron Sensing Platform Based on Functional Lipid Monolayer Microarrays. A. Kenaan, T. D. Nguyen, H. Dallaporta, J.-M. Raimundo, A. M. Charrier, *Anal. Chem.* (**2016**), 88(7), 3804-3809.

24. D/A cruciform bithiophene chromophores as potential molecular scaffolds for optoelectronic applications. H. Aboubakr, C. Praveen, V. Malytskyi, R. Sawadogo, J.-M. Sotiropoulos, L. Belec, H. Brisset, J.-M. Raimundo, *Tetrahedron* (**2016**), 72(10), 1381-1386.