Dr. Jean-Michel Nunzi
Professor, jointly appointed with the Department of Physics, Engineering Physics and Astronomy, and the Department of Chemistry since 2006, Queen's University, Canada.
nunzijm@queensu.ca
Twitter @NunziJM
http://faculty.chem.queensu.ca/people/faculty/Nunzi/
https://orcid.org/0000-0001-5490-4273

Research Specialization: Photonics, Nonlinear Optics, Organic Devices, solar energy, Organic Electronics, Organic Semiconductors, Polymers, Nanomaterials, 2D-materials, Perovskites.

Areas of Research: Optics and Photonics, Micro and Nanoelectronics, Self-organization, Renewable Energies and Sustainability

Editorial Board Membership (EBM): Chinese Optics Letters (OSA); Energies (MDPI); European Physical Journal - Applied Physics (EDP)

Conference Organization

- Co-chair of Nano-Photonics Europe (Strasbourg April 2022, April 2020 and April 2018, Brussels April 2016)
- Co-chair of Energy and the City of the Future (El Jadida 2022, Paris 2021, Queen's remote 2020, Pune Dec 2019, Fes Oct 2018, Longwy April 2017, Kingston May 2016)

Committee member Projets de recherche en équipe, Fonds de recherche du Québec (2023, 2022, 2021, 2020, 2018, 2017); NSERC Scholarships and Fellowships Selection Committee 178 for Physics and Astronomy

Awards and Degrees:

- 2021-2023 – Adjunct Faculty, School of Physics, Shoolini University
- 2019-202**5** – Research Professorship at Nanomaterials Research Institute, Kanazawa University
- 2012-2022 - Visiting Professor, Laboratoire d'Etudes et de Recherche sur le Matériau Bois, IUT Longwy, Lorraine U.
- 2017-2018 - Chinese Academy of Sciences Visiting Professorship for Senior International Scientists at the Shanghai Institute of Optics and Fine Mechanics
- 2013-2020 – Tier 1 Canada Research Chair in Photonics for Life
- 2006-2013 – Tier 1 Canada Research Chair in Chiral Photonics
- 2000-2006 – Head of the Plastic Solar Cells Technology Research Team at University of Angers
- 1995-2000 – Head of the Organic Devices Research Lab at the Atomic Energy Commission in Saclay
- 1990/10 - PhD, Physics, Commissariat à l'Énergie Atomique, Saclay, France

Major funding in last 5 years:

1. Life-mimetic nanophotonics - 2020/4 - 2025/3 Sole Applicant
Natural Sciences and Engineering Research Council of Canada (NSERC) Discovery Grant
Total Funding - $ 205,000
2. Smart energy mix for efficient buildings: wood-substrate based solar-panels - 2020/1-2022/12 Principal Investigator, France-Canada Research Fund - collaborative research grant
Total Funding - $ 15,000
3. CREATE - Materials for Advanced Photonics and Sensing (MAPS) - 2018/4 - 2025/3 Co-investigator (PI: J. Fraser) - Natural Sciences and Engineering Research Council of Canada (NSERC)
Total Funding - 1,649,410; Portion of Funding Received - $ 200,000
4. Two-dimensional semiconductor nonlinear optical modulation technology for all-optical switching applications - 2019/8 - 2022/7 Co-investigator (PI: Jun Wang)
Shanghai Municipal Government and Shanghai Science and Technology Committee
Total Funding - 200,000; Portion of Funding Received - $ 100,000
5. Nanophotonics Research Centre at Queen's - 2017/7 - 2022/6 Co-applicant (PI: S.Hughes),
Canada Foundation for Innovation (CFI) 2017 Innovation Fund
Total Funding - 2,889,550; Portion of Funding Received - $ 288,955

11 patents, 340 peer-reviewed publications, 8900 citations, H-index 51 (Web of Science)

Recent representative publications:

1. 'Interfacial Modification of the Electron Collecting Layer of Low-Temperature Solution-Processed Organometallic Halide Photovoltaic Cells Using an Amorphous Perylenediimide", T. Adhikari, M. Shahiduzzaman, K. Yamamoto, O. Lebel, J.M. Nunzi, Solar Energy Materials and Solar Cells 160, 294–300 (2017) *(IF 7.3)*
2. 'Simple Unbiased Hot-electron Polarization-sensitive Near-Infrared Photo-detector', S.M.A. Mirzaee, O. Lebel, J.M. Nunzi, *ACS Appl. Mater. Inter*. 10, 11862-11871 (2018) *(IF 9.2)*
3. Light induced electro-luminescence patterning: interface energetics modification at semiconducting polymer and metal-oxide heterojunction in a photodiode, S. Bobbara, E. Salim, R. Barille, J.M. Nunzi, *J. Phys. Chem. C* 41, 23506-23514 (2018) *(IF 4.8)*
4. 'Bulk luminescent solar concentrators based on organic-inorganic $CH_3NH_3PbBr_3$ perovskite fluorophores', E. Bagherzadeh-Khajehmarjan, A. Nikniazi, B. Olyaeefar, S. Ahmadi-Kandjani, J.M. Nunzi, *Solar Energy Mater. Solar Cells* 192, 44-51 (2019) *(IF 7.3)*
5. 'Revisiting the optimal nano-morphology: towards amorphous organic photovoltaics', J.M. Nunzi, O. Lebel, *Chem. Rec*. 19, 1028-1038 (2019) *(IF 6.7)*
6. 'Nonlinear Optical Signatures of Transition from Semiconductor to Semimetal in $PtSe_2$', L. Wang, S. Zhang, N. McEvoy, Y.Y. Sun, J. Huang, Y. Xie, N. Dong, X. Zhang, I.M. Kislyakov, J.M. Nunzi, L. Zhang, J. Wang, *Laser & Photon. Rev.* 13, 1900052 (2019) *(IF 13.1)*
7. 'Growth and organization of (3-Trimethoxysilylpropyl) diethylenetriamine within reactive amino-terminated self-assembled monolayer on silica', Y. Dufil, V. Gadenne, P. Carrière, J.M. Nunzi, L. Patrone, *Applied Surface Science* 508, 145210 (2020) *(IF 6.2)*
8. 'Electronic transport in the biopigment Sepia Melanin', M. Reali, A. Gouda, J. Bellemare, D. Ménard, J.M. Nunzi, F. Soavi, C. Santato*, ACS Applied BioMaterials* 3, 5244−5252 (2020)
9. 'Spray Pyrolyzed TiO_2 Embedded Multi-layer Front Contact Design for High-efficiency Perovskite Solar Cells', Md. Shahiduzzaman, M.I. Hossain, S. Visal, T. Kaneko, W. Qarony, S. Umezu, K. Tomita, S. Iwamori, D. Knipp, Y.H. Tsang, Md. Akhtaruzzaman, J.-M. Nunzi, T. Taima, M Isomura*, Nano-Micro Lett.* 13, 36 (2021) *(IF 16.4)*
10. 'The Benefits of Ionic Liquids for the Fabrication of Efficient and Stable Perovskite Photovoltaics', Md. Shahiduzzaman, E.Y. Muslih, A.K.M. Hasan, L.L. Wang, S. Fukaya, M. Nakano, M. Karakawa, K. Takahashi, Md. Akhtaruzzaman, J.-M. Nunzi, T. Taima*, Chemical Engineering J*. 411, 128461 (2021) *(IF 13.3)*
11. 'Double-Layer CsI Intercalation into an $MAPbI_3$ Framework for Efficient and Stable Perovskite Solar Cells', L.L. Wang, Md. Shahiduzzaman, E.Y. Muslih, M. Nakano, M. Karakawa, K. Takahashi, K. Tomita, J.M. Nunzi, Tetsuya Taima, *Nano Energy* 86, 106135 (2021) *(IF 17.8)*
12. 'It is an All-rounder! On the Development of Metal Halide Perovskite-Based Fluorescent Sensors and Radiation Detectors', M. Aamir, M. Shahiduzzaman, T. Taima, J. Akhtar, J.M. Nunzi, *Adv. Opt. Mater*. (2021) DOI: 10.1002/adom.202101276 *(IF 9.9)*
13. 'Ionic Liquid Assisted-$MAPbI_3$ Nanoparticle-Seeded Growth for Efficient and Stable Perovskite Solar Cells', Md Shahiduzzaman, L-L. Wang, S. Fukaya, E.Y. Muslih, A. Kogo, M. Nakano, M. Karakawa, K. Takahashi, K. Tomita, J-M. Nunzi, T. Miyasaka, T. Taima, *ACS Appl. Mater. Int*. 13, 21194–21206 (2021) *(IF 9.2)*
14. Paste ageing spontaneously tunes TiO_2 nanoparticles into reproducible electro-sprayed photo-electrodes', M. Shahiduzzaman, B. Chen, M. Akhtaruzzaman, L.L. Wang, H. Fukuhara, K. Tomita, S. Iwamori, J.-M. Nunzi, T. Taima, S. Umezu, *ACS Applied Materials & Interfaces* 13, 53758–53766 (2021) *(IF 9.2)*
15. 'Low-temperature Treated Anatase TiO_2 Nanophotonic-structured Contact Design for Efficient Triple-cation Perovskite Solar Cells', Md. Shahiduzzaman, M.I. Hossain, S. Otani, L. Wang*,* S. Umezu, T. Kaneko, S. Iwamori, K. Tomita, Y.H. Tsang, Md. Akhtaruzzaman, D. Knipp, J.-M. Nunzi, M. Isomura, J.A. Zapien, T. Taima, *Chemical Engineering J*. 426, 131831 (2021) *(IF 13.3)*
16. 'Dopant-Free Mexylaminotriazine Molecular Glass Hole Transport Layer for Perovskite Solar Cells', L.L. Wang, Md. Shahiduzzaman, E.Y. Muslih, M. Nakano, M. Karakawa, K. Tomita, O. Lebel, J.M. Nunzi, T. Taima, *ACS Applied Energy Materials* 4, 12232–12242 (2021) *(IF 6.0)*
17. 'Single crystal bismuth thiophosphate, BiPS4, as a non-toxic and mechanically robust X-ray detector, R. Kandel, M.F. Webster, A. Hart, R. Poushimin, A. Nikniazi, J.M. Nunzi, M. Bazalova-Carter, P.L. Wang, *ACS Applied Materials & Interfaces* 13, 56296-56301 (2021) *(IF 9.2)*
18. 'Insight into OTFT sensors using confocal fluorescence microscopy', J.N. Arthur, A.K. Pandey, J.M, Nunzi, S.D. Yambem, *ACS Applied Materials & Interfaces* 14, 5709–5720 (2022) *(IF 9.2)*
19. 'Ion-sensitive three-terminal device as a universal hybrid platform with TiO_2 nanowires on the channel', A. Dalal, A. Bebarta, AD. Paul, R. Barman, JM. Nunzi, A. Tameev, R. Mahapatra, A. Mondal, *IEEE Sensors J*. 23, 1917 (2023) *(IF 4.3)*
20. 'Dye-sensitized solar cell performance improvement by dye-solvent polarity and redox mediator potential alignment', A. Daoud, A. Cheknane, A. Meftah, JM. Nunzi, HS. Hilal, *J. Photochemistry & Photobiology A* 441 114732 (2023) *(IF 5.1)*