

# Publication list of Pr. Olivier Pluchery

Updated 10-Dec-2023

## 3 Books

1. Pluchery, O.; Bryche, J.-F., [An Introduction to plasmonics](#). World Scientific: London, 2023; 356 pages.
2. Louis, C.; Pluchery, O., [Gold Nanoparticles for Physics, Chemistry and Biology \(2nd Ed\)](#). World Scientific: London, 2017; 650 pages.
3. Louis, C.; Pluchery, O., [Gold Nanoparticles for Physics, Chemistry and Biology](#). Imperial College Press: London, 2012; 395 pages.

## 5 articles in French (with a review committee)

1. Guesmi, H.; Pluchery, O., Bienvenue dans le monde de l'or nanométrique ! Regards croisés des chimistes, physiciens et biologistes. *l'actualité chimique* **2018**, 425, 15. [Link](#)
2. Fajerweg, K.; Remita, H.; Pluchery, O., Nanoparticules d'or pour susciter des rencontres entre science et société. *l'actualité chimique* **2018**, 425, 29. [Link](#)
3. Burgin, J.; Pluchery, O., Particules d'or : plasmonique et nanoélectronique. *l'actualité chimique* **2018**, 425, 21. [Link](#)
4. Schaming, D.; Pluchery, O.; Remita, H., La ruée vers le nano-or. *Pour la Science* **2014**, 444, 32-39. [Link](#)
5. Pluchery, O.; Carrière, M., *Les nanoparticules d'or*. Editions T.I. Techniques de l'Ingénieur: Paris, 2010; p 27. [Link](#)

## 66 articles in international journals with a review committee

1. Pluchery, O.; Prado, Y.; Watkins, W., A Complete Explanation of the Plasmonic Colours of Gold Nanoparticles and of the Bichromatic Effect. *Journal of Materials Chemistry C* **2023**, 11, 15824-15832 <https://doi.org/10.1039/D3TC02669H>
2. Perez, I. D.; Lim, S.; Nijhuis, C. A.; Pluchery, O.; Rourke, C. J., Electron tunneling in ferritin and associated biosystems. *IEEE Transactions on Molecular, Biological and Multi-Scale Communications* **2023**, 1-1. <https://ieeexplore.ieee.org/document/10123991>
3. Lechaptois, L.; Prado, Y.; Pluchery, O., KPFM visualisation of the Schottky barrier at the interface between gold nanoparticles and silicon. *Nanoscale* **2023**, 15 (16), 7510-7516. <http://dx.doi.org/10.1039/D3NR00178D>
4. Bossard-Giannesini, L.; Cardenas, L.; Cruguel, H.; Demessence, A.; Loffreda, D.; Pluchery, O., How far the chemistry of self-assembled monolayers on gold surfaces affects their work function? *Nanoscale* **2023**. <http://dx.doi.org/10.1039/D3NR03172A>
5. Peillon, S.; Gelain, T.; Payet, M.; Gensdarmes, F.; Grisolia, C.; Pluchery, O., Adhesion forces of radioactive particles measured by the Aerodynamic Method-Validation with Atomic Force Microscopy and comparison with adhesion models. *Journal of Aerosol Science* **2022**, 165. <https://doi.org/10.1016/j.jaerosci.2022.106037>
6. Humbert, C.; Pluchery, O.; Lacaze, E.; Busson, B.; Tadjeddine, A., Two-Colour Sum-Frequency Generation Spectroscopy Coupled to Plasmonics with the CLIO Free Electron Laser. *Photonics* **2022**, 9 (2), 55. <https://www.mdpi.com/2304-6732/9/2/55>
7. Dileseigres, A. S.; Prado, Y.; Pluchery, O., How to Use Localized Surface Plasmon for Monitoring the Adsorption of Thiol Molecules on Gold Nanoparticles? *Nanomaterials* **2022**, 12 (2), 292-306. <https://www.mdpi.com/2079-4991/12/2/292>

8. Snegir, S.; Dappe, Y. J.; Sysoiev, D.; Pluchery, O.; Huhn, T.; Scheer, E., Where are the counterions gone? Tip-induced dissociation of self-assembled triazatriangulenium-based molecules on Au(111). *Phys. Chem. Chem. Phys.* **2021**, *23*, 9930-9937. <http://dx.doi.org/10.1039/D1CP00221J>
9. Snegir, S.; Huhn, T.; Boneberg, J.; Haus, S.; Pluchery, O.; Scheer, E., Ultraviolet Deactivation of Silane-Functionalized Surfaces: A Scalable Approach for Patterned Nanoparticle Assembly. *J. Phys. Chem. C* **2020**, *124* (35), 19259-19266. <https://doi.org/10.1021/acs.jpcc.0c05671>
10. Peillon, S.; Dougniaux, G.; Payet, M.; Bernard, E.; Pieters, G.; Feuillastre, S.; Garcia-Argote, S.; Gensdarmes, F.; Arnas, C.; Miserque, F.; Herlin-Boime, N.; Grisolia, C.; Pluchery, O., Dust sampling in WEST and tritium retention in tokamak-relevant tungsten particles. *Nuclear Materials and Energy* **2020**, *24*, 100781. <http://www.sciencedirect.com/science/article/pii/S2352179120300570>
11. Laurans, M.; Trinh, K.; Dalla Francesca, K.; Izzet, G.; Alves, S.; Derat, E.; Humblot, V.; Pluchery, O.; Vuillaume, D.; Lenfant, S.; Volatron, F.; Proust, A., Covalent Grafting of Polyoxometalate Hybrids onto Flat Silicon/Silicon Oxide: Insights from POMs Layers on Oxides. *ACS Applied Materials & Interfaces* **2020**. <https://doi.org/10.1021/acsami.0c12300>
12. Zhang, Y.; Kang, J.; Pluchery, O.; Caillard, L.; Chabal, Y. J.; Wang, L.-W.; Sanz, J. F.; Salmeron, M., Nanoimaging of Organic Charge Retention Effects: Implications for Nonvolatile Memory, Neuromorphic Computing, and High Dielectric Breakdown Devices. *ACS Applied Nano Materials* **2019**, *2* (8), 4711-4716. <https://doi.org/10.1021/acsanm.9b01182>
13. Peillon, S.; Autricque, A.; Redolfi, M.; Stancu, C.; Gensdarmes, F.; Grisolia, C.; Pluchery, O., Adhesion of tungsten particles on rough tungsten surfaces using Atomic Force Microscopy. *Journal of Aerosol Science* **2019**, *137*, 105431. <https://doi.org/10.1016/j.jaerosci.2019.105431>
14. Pluchery, O.; Caillard, L.; Dollfus, P.; Chabal, Y. J., Gold nanoparticles on functionalized silicon substrate under Coulomb blockade regime: an experimental and theoretical investigation. *J. Phys. Chem. B* **2018**, *122* (2), 897-903. <https://doi.org/10.1021/acs.jpcc.7b06979>
15. Autricque, A.; Peillon, S.; Gensdarmes, F.; Sow, M.; Fedorczak, N.; Roche, H.; Pluchery, O.; Grisolia, C., Dust remobilization from rough planar surfaces in tokamak steady-state plasmas. *Nuclear Materials and Energy* **2018**, *17*, 284-288. <http://www.sciencedirect.com/science/article/pii/S2352179118302874>
16. Stetsenko, M. O.; Rudenko, S. P.; Maksimenko, L. S.; Serdega, B. K.; Pluchery, O.; S.V, S., Solid-state synthesis and optical properties of gold nanoparticle assemblies on a glass surface. *Nanoscale Research Letters* **2017**, *12*, 348-357. <https://dx.doi.org/10.1186/s11671-017-2107-8>
17. Stetsenko, M. O.; Rudenko, S. P.; Maksimenko, L. S.; Serdega, B. K.; Pluchery, O.; Snegir, S. V., Optical Properties of Gold Nanoparticle Assemblies on a Glass Surface. *Nanoscale Research Letters* **2017**, *12*. <https://doi.org/10.1186/s11671-017-2107-8>
18. Snegir, S.; Khodko, A. A.; Sysoiev, D.; Lacaze, E.; Pluchery, O.; Huhn, T., Optical Properties of Gold Nanoparticles Decorated with Furan-based Diarylethene Photochromic Molecules *J. Photochem. Photobiol. A* **2017**, *324*, 78-84. <https://doi.org/10.1016/j.jphotochem.2017.04.003>
19. Kutsenko, V. Y.; Lopatina, Y. Y.; Bossard-Giannesini, L.; Marchenko, O. A.; Pluchery, O.; Snegir, S., Alkylthiol self-assembled monolayers on Au(111) with tailored tail groups for attaching gold nanoparticles. *Nanotechnology* **2017**, *28* (23), 235603-235610. <https://doi.org/10.1088/1361-6528/aa6e3d>
20. Costantini, J.-M.; Miro, S.; Pluchery, O., FTIR study of silicon carbide amorphization by heavy ion irradiations. *Journal of Physics D: Applied Physics* **2017**, *50* (9), 095301. <https://iopscience.iop.org/article/10.1088/1361-6463/aa5614>
21. Snegir, S.; Mukha, I.; Sysoiev, D.; Lacaze, E.; Huhn, T.; Pluchery, O., Optically Controlled properties of nanoparticles stabilized by photochromic difurylene based diarylethenes. *Materials Sciences and Engineering Technology* **2016**, *47* (2-3), 229-236. <https://doi.org/10.1002/mawe.201600472>
22. Pluchery, O.; Caillard, L.; Benbalagh, R.; Gallet, J.-J.; Bournel, F.; Zhang, Y.; Lamic-Humblot, A. F.; Salmeron, M.; Chabal, Y. J.; Rochet, F., Static and Dynamic Electronic Characterization of Organic

- Monolayers Grafted on a Silicon Surface. *Phys. Chem. Chem. Phys.* **2016**, *18*, 3675 - 3684. <https://doi.org/10.1039/C5CP05943G>
23. Bossard-Giannesini, L.; Cruguel, H.; Lacaze, E.; Pluchery, O., Plasmonic properties of gold nanoparticles on silicon substrates: Understanding Fano-like spectra observed in reflection. *Appl. Phys. Lett.* **2016**, *109* (11), 111901. <http://scitation.aip.org/content/aip/journal/apl/109/11/10.1063/1.4962731>
  24. Zhang, Y.; Pluchery, O.; Caillard, L.; Lamic-Humblot, A.-F.; Casale, S.; Chabal, Y. J.; Salmeron, M., Sensing the Charge State of Single Gold Nanoparticles via Work Function Measurements. *Nano Letters* **2015**, *15* (1), 51-55. <https://doi.org/10.1021/nl503782s>
  25. Pluchery, O.; Caillard, L.; Rynder, A.; Rochet, F.; Zhang, Y.; Salmeron, M.; Chabal, Y. J. In *Single Charge Electronics with Gold Nanoparticles and Organic Monolayers*, IMRC 2015, International Materials Research Congress, Cancun, Mexico, MRS Proceedings 2016: Cancun, Mexico, 2015; p 032 (13 pages).
  26. Pluchery, O., Gold Nanoparticles to Drive Single-Electron Currents. *SPIE Newsroom* **2015**. <http://spie.org/x113693.xml>
  27. Caillard, L.; Sattayaporn, S.; Lamic-Humblot, A.-F.; Casale, S.; Campbell, P.; Chabal, Y. J.; Pluchery, O., Controlling the Reproducibility of Coulomb Blockade Phenomena for Gold Nanoparticles on an Organic Monolayer/Silicon System. *Nanotechnology* **2015**, *26*, 065301. <https://doi.org/10.1088/0957-4484/26/6/065301>
  28. Coustel, R.; Pluchery, O.; Witkowski, N.; Borensztein, Y., Mechanism of Benzene Monolayer Formation on Si(100)-2x1 Studied by Surface Differential Reflectance Spectroscopy. *J. Phys. Chem. C* **2014**, *118* (20), 10740-10745. <https://doi.org/10.1021/jp412327p>
  29. Pluchery, O.; Remita, H.; Schaming, D., Demonstrative experiments about gold nanoparticles and nanofilms: an introduction to nanoscience. *Gold Bulletin* **2013**, *46*, 1-9. <http://dx.doi.org/10.1007/s13404-013-0122-9>
  30. Humbert, C.; Pluchery, O.; Lacaze, E.; Tadjeddine, A.; Busson, B., Optical spectroscopy of functionalized gold nanoparticles assemblies as a function of the surface coverage. *Gold Bulletin* **2013**, *46*, 1-11. <http://dx.doi.org/10.1007/s13404-013-0126-5>
  31. Coustel, R.; Borensztein, Y.; Pluchery, O.; Witkowski, N., Unusual Two-Stage Kinetics of Ethylene Adsorption on Si(100) Unraveled by Surface Optical Spectroscopy and Monte Carlo Simulation. *Phys. Rev. Lett.* **2013**, *111* (9), 096103. <http://link.aps.org/doi/10.1103/PhysRevLett.111.096103>
  32. Caillard, L.; Seitz, O.; Campbell, P.; Doherty, R.; Lamic-Humblot, A.-F.; Lacaze, E.; Chabal, Y. J.; Pluchery, O., Gold Nanoparticles on Oxide-Free Silicon-Molecule Interface for Single Electron Phenomena. *Langmuir* **2013**, *29* (16), 5066-5073. <https://doi.org/10.1021/la304971v>
  33. Pluchery, O.; Costantini, J.-M., Infrared spectroscopy characterization of 3C-SiC epitaxial layers on silicon. *J. Phys. D* **2012**, *45* (49), 495101 <https://doi.org/10.1088/0022-3727/45/49/495101>
  34. Humbert, C.; Pluchery, O.; Lacaze, E.; Tadjeddine, A.; Busson, B., A multiscale description of molecular adsorption on gold nanoparticles by nonlinear optical spectroscopy. *Phys. Chem. Chem. Phys.* **2012**, *14*, 280-289. <http://dx.doi.org/10.1039/C1CP21091B>
  35. Pluchery, O.; Vayron, R.; Van, K.-M., Laboratory experiments for exploring the surface plasmon resonance. *European Journal of Physics* **2011**, *32*, 585. <http://dx.doi.org/10.1088/0143-0807/32/2/028>
  36. Herzog, F.; Finocchi, F.; Soukiassian, L.; Pluchery, O., The adsorption of a substituted benzene, the ethynyl-trifluorotoluene on Si(100)-2x1. *Surface Science* **2011**, *605* (1-2), 166-173 <http://dx.doi.org/10.1016/j.susc.2010.10.015>
  37. Pluchery, O.; Lacaze, E.; Simion, M.; Miu, M.; Bragaru, A.; Radoi, A. In *Optical characterization of supported gold nanoparticles for plasmonic biosensors*, Semiconductor Conference (CAS), 2010 International Sinaia, Romania, IEEE Electron Devices Society: Sinaia, Romania, 2010; pp 159-162.
  38. Aureau, D.; Varin, Y.; Roodenko, K.; Seitz, O.; Pluchery, O.; Chabal, Y. J., Controlled Deposition of Gold Nanoparticles on Well-Defined Organic Monolayer Grafted on Silicon. *J. Phys. Chem. C* **2010**, *114* (33), 14180-14186.

39. Pluchery, O.; Humbert, C.; Valamanesh, M.; Lacaze, E.; Busson, B., Enhanced detection of thiophenol adsorbed on gold nanoparticles by SFG and DFG nonlinear optical spectroscopy. *Phys. Chem. Chem. Phys.* **2009**, *11* (35), 7729 - 7737.  
<http://www.rsc.org/publishing/journals/CP/article.asp?doi=b902142f>
40. Palumbo, M.; Witkowski, N.; Pluchery, O.; Del Sole, R.; Borensztein, Y., Reflectance-anisotropy spectroscopy and surface differential reflectance spectra at the Si(100) surface: Combined experimental and theoretical study. *Phys. Rev. B* **2009**, *79* (3), 35327 - 35334. <Go to ISI>://WOS:000262978200095
41. Gaal-Nagy, K.; Incze, A.; Onida, G.; Borensztein, Y.; Witkowski, N.; Pluchery, O.; Fuchs, F.; Bechstedt, F.; Del Sole, R., Optical spectra and microscopic structure of the oxidized Si(100) surface: Combined in situ optical experiments and first principles calculations. *Phys. Rev. B* **2009**, *79*, 045312. <Go to ISI>://WOS:000262978400072
42. Witkowski, N.; Gaal-Nagy, K.; Fuchs, F.; Pluchery, O.; Incze, A.; Bechstedt, F.; Borensztein, Y.; Onida, G.; Del Sole, R., All-optical determination of initial oxidation of Si(100) and its kinetics. *Europ. Phys. J. B* **2008**, *66* (4), 427-431. <Go to ISI>://WOS:000262685200002
43. Marsili, M.; Witkowski, N.; Pulci, O.; Pluchery, O.; Silvestrelli, P. L.; Del Sole, R.; Borensztein, Y., Adsorption of small hydrocarbon molecules on Si surfaces: Ethylene on Si(001). *Phys. Rev. B* **2008**, *77*, 125337.
44. Witkowski, N.; Coustel, R.; Pluchery, O.; Borensztein, Y., RAS: An efficient probe to characterize Si(001)-(2\*1) surfaces. *Surface Science* **2006**, *600* (24), 5142-9. <Go to ISI>://INSPEC:9387085
45. Vidal, F.; Pluchery, O.; Witkowski, N.; Garcia, V.; Marangolo, M.; Etgens, V. H.; Borensztein, Y., alpha-beta Phase transition in MnAs/GaAs(001) thin films: An optical spectroscopic investigation. *Phys. Rev. B* **2006**, *74* (11). <Go to ISI>://WOS:000240872300094
46. Pluchery, O.; Coustel, R.; Witkowski, N.; Borensztein, Y., Adsorption of phenylacetylene on Si(100)-2 x 1: Kinetics and structure of the adlayer. *J. Phys. Chem. B* **2006**, *110*, 22635-22643.  
<http://dx.doi.org/10.1021/jp063988d>
47. Witkowski, N.; Pluchery, O.; Royer, S.; Borensztein, Y., RAS investigation of benzene adsorption on vicinal single domain Si(001)-(2 x 1) surfaces. *Phys. Status Solidi C* **2005**, *2* (12), 4053-4057.  
<http://dx.doi.org/10.1002/pssc.200562230>
48. Witkowski, N.; Pluchery, O.; Borensztein, Y., Optical investigation of benzene adsorption on vicinal single-domain Si(001)-(2\*1) surfaces. *Phys. Rev., B, Condens. Matter Mater. Phys. (USA)* **2005**, *72* (7), 75354-1-75354-75354-7. <Go to ISI>://8585471
49. Pluchery, O.; Witkowski, N.; Borensztein, Y., Investigation of molecule chemisorption on Si(001)2\*1 surfaces by surface reflectance spectroscopies. *Phys. Status Solidi B (Germany)* **2005**, *242* (13), 2696-2703.
50. Borensztein, Y.; Pluchery, O.; Witkowski, N., Probing the Si-Si dimer breaking of Si(100)2\*1 surfaces upon molecule adsorption by optical spectroscopy. *Phys. Rev. Lett.* **2005**, *95* (11), 117402/1-117402/4. <Go to ISI>://8579579
51. Lita, B.; Pluchery, O.; Opila, R. L.; Chabal, Y. J.; Bunea, G.; Holman, J. P.; Bekos, E. J., Wet chemical cleaning of plasma oxide grown on heated (001) InP surfaces. *Journal of Vacuum Science & Technology B (Microelectronics and Nanometer Structures)* **2004**, *22* (4), 1885-92.  
<http://axiom.iop.org/S/BIUS/fmtprt?VdkVgwKey=8083781&fmt=H&emailed=1>
52. Pluchery, O.; Opila, R. L.; Chabal, Y. J., Wet chemical cleaning of InP surfaces investigated by in situ and ex situ infrared spectroscopy. *J. Appl. Phys.* **2003**, *94* (4), 2707-2715.
53. Aramata, A.; Takahashi, S.; Yin, G.; Gao, Y.; Inose, Y.; Mihara, H.; Tadjeddine, A.; Zheng, W. Q.; Pluchery, O.; Bittner, A.; Yamagishi, A., Ligand grafting method for immobilization of metal complexes on a carbon electrode. *Thin Solid Films* **2003**, *242* (2), 239-46.  
<http://axiom.iop.org/S/BIUS/fmtprt?VdkVgwKey=7635742&fmt=H&emailed=1>
54. Zheng, W. Q.; Pluchery, O.; Tadjeddine, A., SFG study of platinum electrodes in perchloric acid solutions. *Surface Science* **2002**, 502-503.  
<http://axiom.iop.org/fmtprt?VdkVgwKey=7334355&fmt=H&emailed=1>

55. Vidal, F.; Busson, B.; Six, C.; Pluchery, O.; Tadjeddine, A., SFG study of methanol dissociative adsorption at Pt(100), Pt(110) and Pt(111) electrodes surfaces. *Surface Science* **2002**, 502-503. <http://axiom.iop.org/fmtprt?VdkVgwKey=7334354&fmt=H&emailed=1>
56. Pluchery, O.; Eng, J., Jr.; Opila, R. L.; Chabal, Y. J., Vibrational study of indium phosphide oxides. *Surface Science* **2002**, 502-503, 75-80. <http://axiom.iop.org/fmtprt?VdkVgwKey=7334297&fmt=H&emailed=1>
57. Fukidome, H.; Pluchery, O.; Queeney, K. T.; Caudano, Y.; Raghavachari, K.; Weldon, M. K.; Chaban, E. E.; Christman, S. B.; Kobayashi, H.; Chabal, Y. J., In situ vibrational study of SiO<sub>2</sub> / liquid interfaces. *Surface Science* **2002**, 502-503. <http://axiom.iop.org/fmtprt?VdkVgwKey=7334356&fmt=H&emailed=1>
58. Busch, B. W.; Pluchery, O.; Chabal, Y. J.; Muller, D. A.; Opila, R. L.; Kwo, J. R.; Garfunkel, E., Materials characterization of alternative gate dielectrics. *MRS Bulletin* **2002**, 27, 206-211. <http://axiom.iop.org/fmtprt?VdkVgwKey=7280811&fmt=H&emailed=1>
59. Pluchery, O.; Tadjeddine, M.; Flament, J.-P.; Tadjeddine, A., Adsorption of 4-cyanopyridine on Au(111) : ab initio calculations and SFG measurement. *PCCP, Phys. chem. chem. phys.* **2001**, 3 (16), 3343 - 3350.
60. Pluchery, O.; Climent, V.; Rodes, A.; Tadjeddine, A., Hydrolysis of the 4-cyanopyridine on a Au(111) electrode studied by vibrational spectroscopies. *Electrochimica Acta* **2001**, 46 (28), 4319 - 4329.
61. Pluchery, O.; Tadjeddine, A., Investigation of the adsorption of 4-cyanopyridine on Au(111) by in situ visible-infrared sum frequency generation. *J. Electroanal. Chem.* **2000**, 500 (1-2), 379 - 387.
62. Tadjeddine, A.; Rille, A. L.; Pluchery, O.; Hebert, P.; Zheng, W. Q.; Marin, T., Adsorption of pyridine on gold, studied by difference frequency generation (DFG) using the CLIO-FEL. *Nuclear Instruments & Methods in Physics Research, Section A (Accelerators, Spectrometers, Detectors and Associated Equipment)* **1999**, 429. <http://axiom.iop.org/fmtprt?VdkVgwKey=6333168&fmt=H&emailed=1>
63. Tadjeddine, A.; Pluchery, O.; A., L. R.; Humbert, C.; M., B.; A., P.; Zheng, W. Q., What can we learn from the non-linear optical investigation of the liquid | solid interface? *J. Electroanal. Chem.* **1999**, 473 (1-2), 25 - 33.
64. Tadjeddine, A.; Le Rille, A.; Pluchery, O.; Vidal, F.; Zheng, W. Q.; Peremans, A., Sum and difference frequency generation at the electrochemical interface. *Physica Status Solidi A* **1999**, 175. <http://axiom.iop.org/fmtprt?VdkVgwKey=6420810&fmt=H&emailed=1>
65. Pluchery, O.; Zheng, W. Q.; Marin, T.; Tadjeddine, A., Study of the adsorption of 4-cyanopyridine on Au(111) using sum frequency generation nonlinear spectroscopy. *Physica Status Solidi A* **1999**, 175. <http://axiom.iop.org/fmtprt?VdkVgwKey=6420816&fmt=H&emailed=1>
66. Krauth, W.; Pluchery, O., A Rapid Dynamical Monte Carlo Algorithm For Glassy Systems. *J. Phys. A* **1994**, 27 (18), L715.