

## Simion Astilean's Curriculum Vitae



### Current positions

Professor, Director of Nanobiophotonics and Laser Microspectroscopy Center, Institute for Interdisciplinary Research on Bio-Nano-Sciences,  
 Director of the Doctoral School,  
 Physics Faculty of Physics, Biomolecular Physics Dept.  
 Babes-Bolyai University, Cluj-Napoca

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### Personal data

Born 6 March 1956, Tiohtiur (Cornesti), county of Cluj, Romania, married, 2 sons

### Education

1990-1993: *PhD in Physics* at the Joseph Fourier University, Grenoble, France

*Thesis: Transfert photoinduit de protons dans des cristaux mixtes pentacene-acide benzoique caractérisé par spectroscopie optique*

Qualification « *Très honorable avec félicitations* » PhD advisor: Dr H. P. Trommsdorff

1980-1981: *MSc. in Physics (solid state physics)*, Faculty of Physics,

Babes-Bolyai University, Cluj-Napoca, Romania

1976-1980: *BSc in Physics*, Faculty of Physics,

Babes-Bolyai University, Cluj-Napoca, Romania

### Employment

since 2003-: *Professor*, Babes-Bolyai University Cluj-Napoca, Romania

1996 – 2002: *Associate Professor* Babes-Bolyai University, Cluj-Napoca, Romania.

1994 - 1996: *Lecturer*, Babes-Bolyai University, Cluj-Napoca, Romania.

1986 - 1994: *Assistant Professor*, Babes-Bolyai University, Cluj-Napoca, Romania.

1981 - 1986: *High school teacher*, Dej, county of Cluj, Romania

## Visiting Scientist

1-30.06.2015, University Paris 13, Bobigny, Paris (invited professor, Ref. Prof Marc Lamy de la Chapelle)

1-30.06 /2007, University „Denis Diderot” Paris VII, Paris (invited professor)

Project: *Plasmonic nanostructures for Surface-Enhanced Vibrational Spectroscopy* (Ref. Prof Jean Aubard)

1/06-31/06 (2006): Laboratoire d'Etudes des Propriétés Electroniques des Solides, CNRS, Grenoble, France (invited professor)

Project: *Designing new experiments for single-molecule optical detection* (Ref: Dr Tomas-Lopez Rios)

1/06-30/08 (2003): University Joseph Fourier, Laboratoire de Spectrométrie Physique, Grenoble, France (invited professor)

Project: *Photoinduced structural modifications in organic crystals* (Ref: Prof. Roger Casalegno)

1/01 (2001) – 31/12 (2002): University of Exeter, Photonics Group, UK (visiting scientist)

Project: *Photonic control of light-molecule interactions.*(Prof WL Barnes)

1/01-31/12 (2000): The Weizmann Institut of Science, Rehovot, Israel (visiting scientist)

Project: *Single-molecule detection by Raman and fluorescence spectroscopy* (Ref: Dr Gilad Haran)

01/02-31/11 (1997): Institut d'Optique Theorique et Appliquee, Paris, France (post-doc)

Project: *Design and fabrication of periodically nanostructured films for diffractive elements* (Ref: Dr. Philippe Lalanne)

## Areas of Research Expertise

► *Nanomaterials, nanofabrication and characterization* (noble metal nanoparticles, graphene and carbon dots, hybrid nanoparticles, surface activation and biofunctionalization; colloidal self-assembly, nanosphere lithography, thin film deposition, plasma cleaning and etching, reactive ion etching; atomic force microscopy, electron microscopy, etc)

► *Optical and laser spectroscopy*: confocal Raman and fluorescence microscopy including time-resolved fluorescence, FCS, FRET, SERS, FT-IR, UV-VIS, dark-field and DIC microscopy, dynamic light scattering (DLS), ‘hole-burning’ optical spectroscopy, etc..

► *Simulations in optics and photonics*: FDTD-finite-difference time-domain, RCWA-rigorous coupled wave analysis, DDA-discrete dipole approximation.

## **Current Research Directions**

► *Development of new nano-systems based on plasmonic nanoparticles* incorporating specific biomolecules, anti-cancer drugs and molecular reporters for applications in nanomedicine and, particularly, in cancer nano-therapy (targeted cancer nano-chemotherapy, nano-photodynamic therapy, plasmonic hyperthermia, multimodal therapy, molecular imaging and diagnostic, etc.)

► *Development of plasmonic nano-biosensors and nanodevices* based on (periodically) nanostructured metallic films or colloidal nanoparticles for detection and identification of various biomarkers and (bio)chemical agents via vibrational spectroscopy including ordinary Raman and SERS, localized surface plasmon resonance LSPR-UV-VIS, steady-state and time-resolved fluorescence including metal-enhanced fluorescence (MEF), FCS and FRET, etc.

► *Implementation of reliable and less expansive nanofabrication and nano-structuration procedures* (self-assembling, nanosphere lithography, thin film deposition, chemical synthesis and bio-synthesis of plasmonic nanoparticles, CVD, RIE processing, etc.)

## **Achievements**

- Co-author of 202 *scientific papers* (from Web of Science Core Collection);
- Over 4270 *international citations* (excluding self-citations, from Web of Science);
- Hirsch index  $H= 36$ ;
- Co-author of scientific book published by Springer Verlag Ed.;
- Invited contributor of 5 chapters in international books;
- Co-author of 3 scientific books published in Romanian;
- Co-editor of one scientific book published in Romania;

- 17 invited/plenary lectures in international meetings (conferences)
- Principal investigator of 9 national research projects +3 bilateral international projects.
- Advisor of 25 PhD students (18 defended, 7 on progress, 2 international joint program).
- Guest Editor for a special issue on SERS published in Journal of Nanotechnology (2012)  
<http://www.hindawi.com/journals/jnt/2012/413156/>;
- Co-Editor for a special issue in J. Mol. Structure (2013) for a collection of papers presented at the XXXI<sup>st</sup> European Congress on Molecular Spectroscopy, Cluj-Napoca, Romania, August 26-31, 2012;
- Co-chairman of the European Congress on Molecular Spectroscopy (EUCMOS 2012) in Cluj-Napoca <http://www.phys.ubbcluj.ro/eucmos2012/> ;
- Member of the International Scientific Committee of European Congress on Molecular Spectroscopy (<http://eucmos2016.mke.org.hu/organizers-and-committees.html>)
- Member of the International Scientific Committee of European Conference in Spectroscopy of Biological Molecules (<http://www.ecsbm2015.de/general-information/organizational-remarks/>);
- 2 articles featured on the front cover of Nanotechnology Journal:
  - <http://ej.iop.org/pdf/nano/vol22/na2205-webcover.pdf> ;
  - Nanotechnology, Vol 26 (5), 2015, Article Number: 055101;
- 1 article featured on the front cover of Applied Material & Interfaces Journal Vol 5(4), 2013  
<http://pubs.acs.org/toc/aamick/5/4>
- Invited paper in Journal of Optics highlighted in Lab Talk on IOPscience:  
<http://iopscience.iop.org/2040-8986/labtalk-article/63085>
- Review paper in Polymer International 65 (2016) 157--163 highlighted in Materials Views: <http://www.materialsviews.com/towards-more-efficient-oleds-enhancing-the-emission-properties-of-polymeric-semiconductors/>;
- Research paper highlighted in the Editorial of Nanotechnology dedicated to the International Year of Light 2015 “<http://iopscience.iop.org/0957-4484/26/9/090201/article>”
- Research paper featured on nanotechweb.org (Lab Talk):  
<http://iopscience.iop.org/0957-4484/labtalk-article/48366>

## Honors and Awards

1. Romanian Academy Award (1990);
2. Diploma of Scientific Excellence (Babes-Bolyai University in 2008, 2010, 2016).

## Functions and Academic Responsibilities

1. Member of CNATDCU (2016-2020)
2. Member of CNATDCU -Appeal Commission (2015-2016)
3. Member of CNDI (2011-2012)
4. Director of Doctoral School (2017-present);
5. Member of Scientific Council of Babes-Bolyai University (2016-present);
6. Director of Research Center at Babes-Bolyai University (2004-present);

## CNATDCU Scores

A=57.141

P=44.447

I=33.097

C=1094.398

*Total score:  $A+P/2+I/2+C/20+H/5= 157.833$*

## Publications

### International books / book chapters

1. *Raman and SERS investigation of pharmaceuticals*, M. Baia, S. Astilean, T. Iliescu, Springer-Verlag, Berlin Heidelberg, 2008.
2. *Surface-Enhanced Raman Scattering: Fundamentals and Biosensing Applications*, Cosmin Farcau and Simion Astilean, contributed chapter in Handbook of Enhanced Spectroscopies, Pan Stanford Publishing Pte. Ltd., USA, 2015.
3. *Detection of Environmental Pollutants by Surface-Enhanced Raman Spectroscopy*, M. Potara, C. Farcau, I. Botiz, S. Astilean contributed chapter in Advanced Environmental Analysis: Applications of Nanomaterials, Volume 1, Royal Society of Chemistry, 2017, pp 479-503, ISBN: 978-1-78262-144-7.
4. *Polymer-coated plasmonic nanoparticles for environmental remediation: Synthesis, functionalization, and properties*, M. Potara, M. Focsan, A.M. Craciun, I. Botiz, S. Astilean contributed chapter in New Polymer Nanocomposites for Environmental Remediation, Elsevier Inc, 2018, pp 361-387, ISBN: 978-012811034-8.
5. *Plasmonic-based SERS traceable drug nanocarriers in cancer theranostic*, M. Potara, T. Nagy-Simon, S. Suarasan, S. Astilean contributed chapter in Plasmonics in Chemistry and Biology, Jenny Stanford Publishing, 2019, pp 159-198, ISBN: 978-981480003-7.
6. *Advanced nanostructures for microbial contaminants detection by means of spectroscopic methods*, M. Potara, A. Campu, S. D. Maniu, M. Focsan, I. Botiz, S. Astilean contributed chapter in Advanced Nanostructures for Environmental Health, Elsevier Inc, 2020 pp 347-384 ISBN: 978-0-12-815882-1.

### **Selected Papers (93 of 197)**

- 93.** Reduced graphene oxide today, R Tarcan, O Todor-Boer, I Petrovai, C Leordean, S Astilean, I Botiz, *J. Mater. Chem. C* 8 (2020)1198-1224.
- 92.** Control of microstructure in polymer: Fullerene active films by convective self-assembly, O Todor-Boer, I Petrovai, R Tarcan, L David, S Astilean, I Botiz, *Thin Solid Films* 697 (2020) art number 137780.
- 91.** CD19-targeted, Raman tagged gold nanourchins as theranostic agents against acute lymphoblastic leukemia, AS Tatar, A Jurj, C Tomuleasa, A Florea, I Berindan-Neagoe, D. Cialla-May, J. Popp, S. Astilean, S. Boca, *Colloids and Surfaces B: Biointerfaces* 184 (2019) art number 110478.
- 90.** Enhancing Photoluminescence Quenching in Donor-Acceptor PCE11:PPCBMB Films through the Optimization of Film Microstructure, O Todor-Boer, I Petrovai, R Tarcan, A Vulpoi, L David, S Astilean, I Botiz, *Nanomaterials* 9 (2019) art number1757.
- 89.** Efficient combined near-infrared-triggered therapy: Phototherapy over chemotherapy in chitosan-reduced graphene oxide-IR820 dye-doxorubicin nanoplatfoms, D. Zaharie-Butucel, M. Potara, S. Suarasan, E. Licarete, S. Astilean, *J. Colloid Interf Sci.* 552 (2019) 218-229.
- 88.** Assessment of the photothermal conversion efficiencies of tunable gold bipyramids under irradiation by two laser lines in a NIR biological window, A Campu, AM Craciun, M Focsan, S Astilean, *Nanotechnology* 30 (2019) art number 405701.
- 87.** Fabrication of gold-silver core-shell nanoparticles for performing as ultrabright SERS-nanotags inside human ovarian cancer cells, A.-M. Hada, M. Potara, S. Suarasan, A. Vulpoi, T. Nagy-Simon, E. Licarete, S. Astilean, *Nanotechnology* 30 (2019) art number 315701
- 86.** Intracellular Dynamic Disentangling of Doxorubicin Release from Luminescent Nanogold Carriers by Fluorescence Lifetime Imaging Microscopy (FLIM) under Two-Photon Excitation, S. Suarasan, A.-M. Craciun, E. Licarete, M. Focsan, K. Magyari, S. Astilean, *ACS Appl. Mater. Interfaces* 11 (2019) 7812-7822.
- 85.** Multimodal Biosensing on Paper-Based Platform Fabricated by Plasmonic Calligraphy Using Gold Nanopyramids Ink, A. Campu, L. Susu, F. Orzan, D. Maniu, A. M. Craciun, A. Vulpoi, L. Roiban, M. Focsan, S. Astilean, *Front. Chem.* 7 (2019) art number 55.
- 84.** Gold NanoBipyramids Performing as Highly Sensitive Dual-Modal Optical Immunosensors, A. Campu, F. Lerouge, D. Chateau, F. Chaput, P. Baldeck, S. Parola, D. Maniu, A. M. Craciun, A. Vulpoi, S. Astilean, M. Focsan, *Anal. Chem.* 90 (2018) 8567-8575
- 83.** Probing cellular uptake and tracking of differently shaped gelatin-coated gold nanoparticles inside of ovarian cancer cells by two-photon excited photoluminescence analyzed by fluorescence lifetime imaging (FLIM), S. Suarasan, E. Licarete, S. Astilean, A-M. Craciun, *Colloids Surf. B* 166 (2018) 135-143
- 82.** IR780-dye loaded gold nanoparticles as new near infrared activatable nanotheranostic agents for simultaneous photodynamic and photothermal therapy and intracellular tracking by surface enhanced resonant Raman scattering imaging, T. Nagy Simon, M. Potara, A. M. Craciun, E. Licarete, S. Astilean, *J. Colloid Interf Sci.* 517 (2018) 239-250
- 81.** Flexible and Tunable 3D Gold Nanocups Platform as Plasmonic Biosensor for Specific Dual LSPR SERS Immuno-Detection, M. Focsan, A.M. Craciun, M. Potara, C. Leordean, A. Vulpoi, D. Maniu, S. Astilean, *Sci Rep-UK*, 7 (2017) ID14240

- 80.** Carboplatin-Loaded, Raman-Encoded, Chitosan-Coated Silver Nanotriangles as Multimodal Traceable Nanotherapeutic Delivery Systems and pH Reporters inside Human Ovarian Cancer Cells, M. Potara, T. Nagy Simon, A. M. Craciun, S. Suarasan, E. Licarete, F. Imre Lucaci, S. Astilean, ACS Appl. Mater. Interfaces 9 (2017) 32565-32576.
- 79.** Antibody Conjugated, Raman Tagged Hollow Gold–Silver Nanospheres for Specific Targeting and Multimodal Dark-Field/SERS/Two Photon-FLIM Imaging of CD19(+) B Lymphoblasts, T. Nagy Simon, A. Tatar, A. M. Craciun, A. Vulpoi, M. A. Jurj, A. Florea, C. Tomuleasa, I. Berindan-Neagoe, S. Astilean, S. Boca, ACS Appl. Mater. Interfaces 9 (2017) 21155-21168.
- 78.** Revealing the structure and functionality of graphene oxide and reduced graphene oxide/pyrene carboxylic acid interfaces by correlative spectral and imaging analysis, D. Zaharie-Butucel, M. Potara, A.M. Craciun, R. Boukherroub, S. Szunerits, S. Astilean, Phys. Chem. Chem. Phys. 19 (2017) 16038-16046
- 77.** Flexible transparent sensors from reduced graphene oxide micro-stripes fabricated by convective self-assembly, D. Zaharie-Butucel, L. Digianantonio, C. Leordean, L. Ressler, S. Astilean, C. Farcau, Carbon 113 (2017) 361-370
- 76.** Enhanced one- and two-photon excited fluorescence of cationic (phenothiazinyl)vinylpyridinium chromophore attached to polyelectrolyte-coated gold nanorods, A. M. Craciun, M. Focsan, L. Gaina, S. Astilean, Dyes Pigments 136 (2017) 24-30
- 75.** A simple and efficient design to improve the detection of biotin-streptavidin interaction with plasmonic nanobiosensors, M. Focsan, A. Campu, A.M Craciun, M. Potara, C. Leordean, D. Maniu, S. Astilean, Biosens. Bioelectron. 86 (2016) 728-735
- 74.** Nanomedicine approaches in acute lymphoblastic leukemia, A. Tatar, T. Nagy Simon, C. Tomuleasa, S. Boca, S. Astilean, J. Control. Release 238 (2016) 123-138
- 73.** Doxorubicin-Incorporated Nanotherapeutic Delivery System Based on Gelatin-Coated Gold Nanoparticles: Formulation, Drug Release, and Multimodal Imaging of Cellular Internalization, S. Suarasan, M. Focsan, M. Potara, O. Soritau, A. Florea, D. Maniu, S. Astilean, ACS Appl. Mater. Interfaces 8 (2016) 22900-22913.
- 72.** Metanephrine neuroendocrine tumor marker detection by SERS using Au nanoparticle/Au film sandwich architecture, S. Boca, C. Farcau, M. Baia, S. Astilean, Biomed. Microdevices 18 (2016) 12:1-10
- 71.** Gelatin coated gold nanoparticles as carriers of FLT3 inhibitors for acute myeloid leukemia treatment, S. Suarasan, T. Simon, S. Boca, C. Tomuleasa, S. Astilean, Chem Biol Drug Des - (2016)
- 70** Gold nanoparticles enhance the effect of tyrosine kinase inhibitors in acute myeloid leukemia therapy, S. Boca, Petrushev B, Boca S, Simon T, Berce C, Frinc I, Dima D, Selicean S, Gafencu GA, Tanase A, Zdrenghea M, Florea A, Suarasan S, Dima L, Stanciu R, Jurj A, Buzoianu A, Cucuianu A, Astilean S, Irimie A, Tomuleasa C, Berindan-Neagoe I, International Journal of Nanomedicine 11 (2016) 641/660.
- 69** Efficient etching-free transfer of high quality, large-area CVD grown graphene onto polyvinyl alcohol films, B. Marta, C. Leordean, T. Istvan, I. Botiz, S. Astilean, Appl. Surf. Sci. 363 (2016) 613-618
- 68.** Designing chitosan–silver nanoparticles–graphene oxide nanohybrids with enhanced antibacterial activity against Staphylococcus aureus, Bogdan Marta, Monica Potara, Maria Iliut, Endre Jakab, Teodora Radu, Florica Imre-Lucaci, Gabriel Katona, Octavian Popescu, Simion Astilean, Colloids and Surfaces A: Physicochem. Eng. Aspects 487 (2015) 113–120.

67. Fabrication of highly active and cost effective SERS plasmonic substrates by electrophoretic deposition of gold nanoparticles on a DVD template, C. Leordean, B. Marta, A.-M. Gabudean, M. Focsan, I. Botiz, S. Astilean, *Appl. Surf. Sci.* 349 (2015) 190-195.
66. Biosynthesized silver nanoparticles performing as biogenic SERS-nanotags for investigation of C26 colon carcinoma cells, M. Potara, M. Bawaskar, T. Simon, S. Gaikwad, E. Licarete, A. Ingle, M. Banciu, A. Vulpoi, S. Astilean, M. Rai, *Colloids Surf. B* 133 (2015) 296-303.
65. Designing Theranostic Agents Based on Pluronic Stabilized Gold Nanoaggregates Loaded with Methylene Blue for Multimodal Cell Imaging and Enhanced Photodynamic Therapy, T. Simon, M. Potara, A. M. Gabudean, E. Licarete, M. Banciu, S. Astilean, *ACS Appl. Mater. Interfaces* 7 (2015) 16191-16201.
64. One-pot, green synthesis of gold nanoparticles by gelatin and investigation of their biological effects on Osteoblast cells, S. Suarasan, M. Focsan, O. Soritau, D. Maniu, S. Astilean, *Colloids and Surfaces B: Biointerfaces* 132 (2015) 122-131.
63. Fabrication of stable network-like gold nanostructures in solution and their assessment as efficient NIR-SERS platforms for organic pollutants detection, D. S. Tira, M. Potara, S. Astilean, *Mater Res Bull* 64 (2015) 267–273
62. Comparative toxicity evaluation of flower-shaped and spherical gold nanoparticles on human endothelial cells, Sultana, Sadequa; Djaker, Nadia; Boca-Farcu, Sanda; Salerno, Milena; Charnaux, Nathalie; Astilean, Simion; Hlawaty, Hanna; de la Chapelle, Marc Lamy; *Nanotechnology* Volume: 26 Issue: 5 Article Number: 055101, 2015
61. Comparative evaluation by scanning confocal Raman spectroscopy and transmission electron microscopy of therapeutic effects of noble metal nanoparticles in experimental acute inflammation, A. Filip, M. Potara, A. Florea, I. Baldea, D. Olteanu, P. Bolfa, S. Clichici, L. David, B. Moldovan, L. Olenic and S. Astilean, *RSC Advances* 5 (2015) 67435-67448.
60. Surface-enhanced spectroscopy on plasmonic oligomers assembled by AFM nanoxerography, Moutet, Pierre; Sangeetha, Neralagatta M.; Ressler, Laurence; Vilar-Vidal, Noelia; Comesana-Hermo, Miguel; Ravaine, Serge; Vallee, Renaud A. L.; Gabudean, Ana Maria; Astilean, Simion; Farcau, Cosmin, *Nanoscale*, Volume: 7 Issue: 5 Pages: 2009-2022, 2015
59. Controlling the Luminescence of Carboxyl- Functionalized CdSe/ZnS Core–Shell Quantum Dots in Solution by Binding with Gold Nanorods Monica Focsan, Ana Gabudean, Adriana Vulpoi, Simion Astilean, *J Phys Chem C* (<http://pubs.acs.org/doi/abs/10.1021/jp501281v>)
58. Surface Modeling of Nanopatterned Polymer Films Obtained by Colloidal Templated Electropolymerization, A. Cernat, E. Bodoki, C. Farcau, S. Astilean, S. Griveau, F. Bedioui, R. Sandulescu, *J. Nanosci. Nanotechnol* 15 (2014) 3359
57. Enhancing the Photoluminescence Emission of Conjugated MEH-PPV by Light Processing, I. Botiz, P. Freyberg, C. Leordean, A.-M. Gabudean, S. Astilean, A. C.-M. Yang, N. Stingelin, *ACS Appl. Mater. Interfaces* 6 (2014) 4974–4979.
56. Finite-Difference Time-Domain (FDTD) design of gold nanoparticle chains with specific surface plasmon resonances, Tira, Cristian; Tira, Daniela; Simon, Timea; S. Astilean, *J Mol. Structure*, Vol: 1072 , 137- 143
55. Periodically nanostructured substrates for surface enhanced Raman spectroscopy, C. Farcau, S. Astilean, *J. Mol. Struct.* 1073 (2014) 102-111
54. Steady-state and time-resolved fluorescence studies on the conjugation of Rose Bengal to gold nanorods, A. Gabudean, R. Groza, D. Maniu, S. Astilean, *J. Mol. Struct.* 1073 (2014) 97–101



- 53.** Multiscale electromagnetic SERS enhancement on self-assembled micropatterned gold nanoparticle films, Cosmin Leordean, Monica Potara, Sanda Boca-Farcau, Adriana Vulpoi, Simion Astilean and Cosmin Farcau, J of Raman Spectroscopy 2014 (article in press, DOI 10.1002/jrs.4510).
- 52.** Folic Acid-Conjugated, SERS-Labeled Silver Nanotriangles for Multimodal Detection and Targeted Photothermal Treatment on Human Ovarian Cancer Cells, S. Boca-Farcau, M. Potara, T. Simon, A. Juhem, P. Baldeck and S. Astilean, Molecular Pharmaceutics 11 (2014) 391–399.
- 51.** Pluronic-coated silver nanoprisms: Synthesis, characterization and their antibacterial activity, Marta, B., Jakab, E., Potara, M., Simon, T., Imre-Lucaci, F., Barbu-Tudoran, L., Popescu, O., Astilean, S. Colloids and Surfaces A: Physicochemical and Engineering Aspects 441 2014 77-83 2014 (article in press DOI: 10.1016/j.molstruc.2014.05.015)
- 50.** Easy and cheap fabrication of ordered pyramidalshaped plasmonic substrates for detection and quantitative analysis using surface-enhanced Raman spectroscopy, C. Leordean, A. M. Gabudean, V. Canpean and S. Astilean, Analyst 138 (2013) 4975-4981.
- 49.** Reliable plasmonic substrates for bioanalytical SERS applications easily prepared by convective assembly of gold nanocolloids. C. Farcau, M. Potara, C. Leordean, S. Boca, S. Astilean, Analyst 138 (2013) 546-552.
- 48.** Polarization-Sensitive Linear Plasmonic Nanostructures via Colloidal Lithography with Uniaxial Colloidal Arrays, V. Saracut, M. Giloin, M. Gabor, S. Astilean, and C. Farcau, ACS Applied Materials & Interfaces 5 (2013) 1362-1369. *This publication has been highlighted on the front cover of the journal*
- 47.** Chitosan-coated triangular silver nanoparticles as a novel class of biocompatible, highly sensitive plasmonic platforms for intracellular SERS sensing and imaging, Monica Potara, Sanda Boca, Emilia Licarete, Annette Damert, Marius-Costel Alupei, Mircea T. Chiriac, Octavian Popescu, Ute Schmidt and Simion Astilean, Nanoscale 5 (2013), 6013-6022.
- 46.** LED-activated methylene blue-loaded Pluronic-nanogold hybrids for in vitro photodynamic therapy Simon, T., Boca-Farcau, S., Gabudean, A.-M., Baldeck, P., Astilean, S., Journal of Biophotonics 6 (11-12) 2013 950-959.
- 45.** Riboflavin enhanced fluorescence of highly reduced graphene oxide, Authors of Document Iliut, M., Gabudean, A.-M., Leordean, C., Teodorescu, C.-M., Astilean, S. , Chemical Physics Letters 586 2013 127-131
- 44.** A new green, ascorbic acid-assisted method for versatile synthesis of Au-graphene hybrids as efficient surface-enhanced Raman scattering platforms, Maria Iliut, Cosmin Leordean, Valentin Canpean, Cristian-Mihail Teodorescu and Simion Astilean, J. Material Chemistry 1, 2013, 4094-4104.
- 43.** Gold–Pluronic core–shell nanoparticles: synthesis, characterization and biological evaluation Timea Simon, Sanda Boca, Dominic Biro, Patrice Baldeck, Simion Astilean, J NANOPART RESEARCH 15 (2013) 1578.
- 42.** Localised Surface Plasmon Resonance biosensor for the protein detection, M. Cottat, N. Thioune, A.M. Gabudean, N. Lidgi-Guigui, M. Focsan, S. Astilean, M. Lamy de la Chapelle, Plasmonics 8(2), (2013) 699.
- 41.** Study of gold nanorods – protein interaction by Localized Surface Plasmon Resonance spectroscopy, N. Thioune, N. Lidgi-Guigui, M. Cottat, A.-M. Gabudean, M. Focsan, H.M. Benoist, S. Astilean, M. Lamy de la Chapelle, Gold Bulletin 46 (2013) 281.

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- 39.** Hybrid plasmonic platforms based on silica-encapsulated gold nanorods as effective spectroscopic enhancers for Raman and fluorescence spectroscopy, Gabudean, A. M.; Biro, D.; Astilean, S. *Nanotechnology*, Volume: 23 Issue: 48 Article Number: 485706 DOI: 10.1088/0957-4484/23/48/485706 (2012).
- 38.** Temperature effect on the SERS signature of p-aminothiophenol: A new evidence for the production of p,p'-dimercaptoazobenzene on metallic nanostructures, Canpean, V.; Astilean, S. *Spectrochimica Acta part A Molecular and Biomolecular spectroscopy* Volume: 96 Pages: 862-867 DOI: 10.1016/j.saa.2012.07.120 (2012).
- 37.** Pluronic-Nanogold hybrids: Synthesis and tagging with photosensitizing molecules : Simon, Timea; Boca, Sanda C.; Astilean, Simion, *COLLOIDS AND SURFACES B-BIOINTERFACES* Volume: 97 Pages: 77-83 DOI: 10.1016/j.colsurfb.2012.03.037 (2012)
- 36.** Gold Nanorods Performing as Dual-Modal Nanoprobes via Metal-Enhanced Fluorescence (MEF) and Surface-Enhanced Raman Scattering (SERS), Gabudean, Ana M.; Focsan, Monica; Astilean, Simion, *JOURNAL OF PHYSICAL CHEMISTRY C* Volume: 116 Issue: 22 Pages: 12240-12249 DOI: 10.1021/jp211954m (2012).
- 35.** Designing polarization insensitive negative index metamaterial for operation in near infrared Author(s): Giloan, M.; Astilean, S., *OPTICS COMMUNICATIONS* Volume: 285 Issue: 8 Pages: 2195-2200 DOI: 10.1016/j.optcom.2011.12.096 (2012).
- 34.** Visible frequency range negative index metamaterial of hexagonal arrays of gold triangular nanoprisms Giloan, M.; Astilean, S. *OPTICS COMMUNICATIONS* Volume: 285 Issue: 6 Pages: 1533-1541 DOI: 10.1016/j.optcom.2011.11.093 (2012).
- 33.** Understanding plasmon resonances of metal-coated colloidal crystal monolayers, C. Farcau, M. Giloan, E. Vinteler, S. Astilean, *Appl Phys B* (2012) 106:849–856.
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### Invited Conferences

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2. Nanosphere Lithography and Self-Assembling – Two Versatile Routes for Fabrication of Noble-Metal Nanostructures, Conferinta Invitata la Workshop International Computational Materials Science and Nanostructures, Technische Universitat Vienna, October 5-7, 2005
3. Noble-Metal Nanoparticles: Fabrication, Optical Properties, and Applications toward Biology and Nanotechnology, Conferinta Invitata la 3rd International Workshop on Amorphous and Nanocomposite Magnetic Materials (ANMM'2005) Iasi, Romania, September 19 – 21, 2005. (<http://www.phys-iasi.ro/anmm2005/invited%20talks.htm>)
4. Designing Plasmonic Nanostructures as Multifunctional Optical Sensors for Molecular Detection, Conferinta Invitata, NanoBiotechnology: Bio-interfaces International Workshop 5-7 December 2007 EC Joint Research Centre, Ispra, Italy,
5. S. Astilean, Plasmonic nanostructures for molecular sensing with surface-enhanced vibrational spectroscopy, Conferinta Invitata, The IX<sup>th</sup> ICFPAM (International Conferences on Frontiers of Polymers and Advanced Materials, Cracow, Poland, 8-12 July. 2007 (<http://www.9icfpam.pk.edu.pl/Speakers.htm>)
6. Plasmonic Nanostructures Characterization by Combining Confocal Surface-Enhanced Raman Scattering and Atomic Force Microscopy, Conferinta Invitata Introduction to Confocal Raman Microscopy 7 - 8 October 2008 Ulm, Germany (<http://www.witec.de/en/eventsseminars/files/FlyerRamanIntro08.pdf> invitatia atasata)
7. Plasmonics – a new paradigm of photonics for guiding light and enabling novel biomedical applications at nanoscale, IInd EURYIAS 2008 International symposium on Self-Organization and Selection in Evolution of Matter, Molecules and Life April 29-May 3, 2008, Bucuresti. (<http://www.biodyn.ro/robios/progEURYIAS2008.pdf>)

8. Fabrication of plasmonic nanostructures with multiple bio-functionalities from sensing to imaging and therapy, Journées Internationales de Plasmonique Moléculaire, Îles de Porquerolles, 1-3 Octobre 2012, Porquerolles, France.
9. From single-molecule spectroscopy to cancer therapy with multifunctional plasmonic nanoparticles, “Functionalized Surfaces and Nanobiocomposites” COST Action CM1101, 26-28 May 2013, Szeged, Hungary.
10. Plasmonic Nanoparticles Performing as Multifunctional Platforms in Sensing, Imaging and Therapeutic Applications, 9Th Nanoscience and Nanotechnology Conference, Atatürk University, June 24-28, 2013, Erzurum, TURKEY,
11. Plasmonic platforms for multimodal enhanced spectroscopies and combining of sensing with imaging and therapy, Surface-Enhanced Spectroscopies, 7-10 August 2014, Technical University of Chemnitz, Germany.
12. Multifunctional Plasmonic Nanostructures: Controlling Fabrication and Implementing Relevant Applications in Sensing, Imaging, and Therapy, the XXIV. International Conference on Raman Spectroscopy (ICORS), 10-15 August 2014, Jena, Germany.
13. Plasmonic nanoplatforms with multiple functionalities: from biosensing to cell imaging and therapy, Amorphous and Nanostructured Magnetic Materials – ANMM2015 Iași, 21-24 September 2015 ([http://ww3.phys-iasi.ro/Invited\\_Speakers2015.htm](http://ww3.phys-iasi.ro/Invited_Speakers2015.htm))
14. Surface plasmon resonant nanoparticles: from controlled fabrication to interesting optical properties and recent applications in nanomedicine, The 9th International Conference on Advanced Materials, ROCAM 2017, 11-14 July 2017, University of Bucharest, Romania.
15. Designing multifunctional plasmonic nanoplatforms for applications in nanomedicine, The Fifth Edition of International Conference on Analytical and Nanoanalytical Methods for Biomedical and Environmental Sciences “IC-ANMBES 2018” 23rd-25th May 2018, Brasov, Romania.
16. Plasmonic nanoparticles in nanomedicine, 3rd International Workshop on Materials Physics, 29-30 May 2018, Bucharest, Romania.
17. Designing Versatile Plasmonic-Based Nanoplatforms for Applications in Nanomedicine, 5th International Workshop on Nano- and Biophotonics IWNBP, 22-27 September 2019, Saint Nectaire, France.

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**Cluj-Napoca, 20 April 2020**

