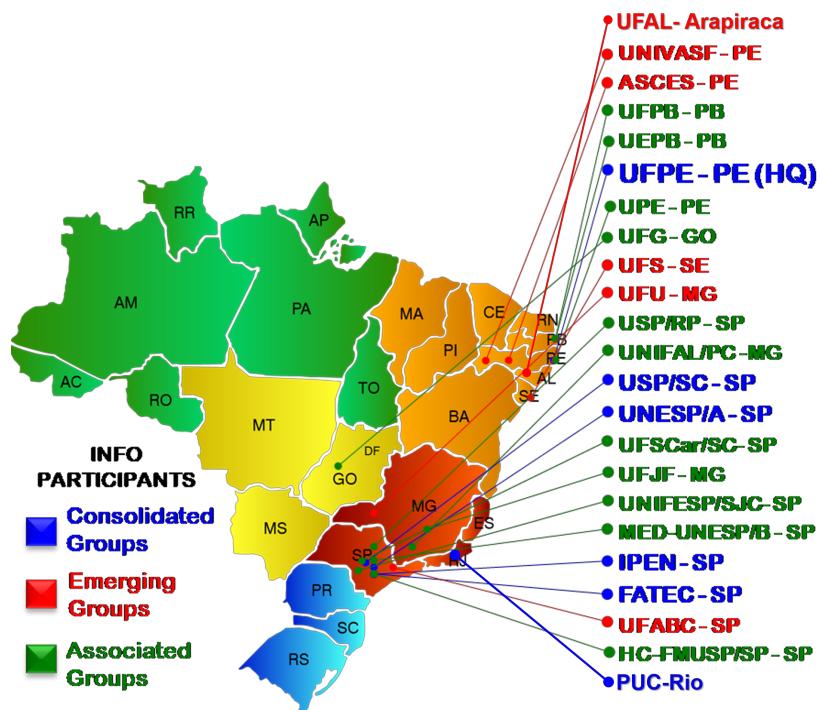


INFO

Photonics National Institute
for Science and Technology

Headquarters
Physics Department - Universidade Federal de Pernambuco



II Workshop INFO

Araraquara, SP, 12-15 Feb 2020



National Institute of Photonics
INCT de Fotônica



II WORKSHOP INFO

Araraquara, 12 – 15 February 2020

Araucária Flat, Araraquara

Dear Colleagues

We would like to give you a warm welcome to Araraquara and to the II INFO Workshop. The Institute is in its second phase of the National Science and Technology Institutes – INCTs - program, approved by MCT/CNPq/CAPES/FACEPE last November 2016, as a result of the call of the INCTs proposal in 2014. This second workshop brings together most of the INFO's participants, with about 170 attendees.

We will have a very intense scientific activity in these two days, with two plenary lectures from two of the members of our international advisor committee, 12 talks from the institutional coordinators of the member institutions and about 100 posters presented by students and post-docs. We initially had 10 institutions, but two were included later, PUC-Rio and UFAL-Arapiraca, by approval of the Managing Committee.

I would like to thank Prof. Sidney Ribeiro, the Vice- coordinator, who was very supportive of the planning for this workshop. A very special thanks go to Silvia Santagnelli (UNESP-Araraquara), Audrey Andrade (DF-UFPE and Flavia Xavier (DF-UFPE) for the very hard work in Recife and Araraquara with all preparations. We thank all participants for their presence and contributions.

We thank CNPq, CAPES and FACEPE for the financial support.

Araraquara, 12 feb 2020.

Anderson Gomes, DF/UFPE, Coordinador
Sidney Ribeiro, UNESP/Araraquara, Vice-Coordinator



II WORKSHOP INFO
Araraquara, 12 – 15 February 2020
Araucária Flat, Araraquara

Wed, Feb 12th

18:00 – 22:00 – Arrival, registration
Dinner on your own

Thu, Feb 13th

8:00 – 8:30 - Opening – Anderson Gomes - INFO Coordinator
8:30 – 9:20 – Plenary Lecture #1 – **Controlling Optical Excitation and Dynamics for Biophotonics and Nanophotonics**, Paras Prasad, University of Buffalo – USA
9:30 – 11:00 – UNESP and Associated Groups

11:00 – 11:20 – Coffee Break

11:20 – 11:40 – UNIVASF
11:40 – 12:00 – ASCES
12:00 – 13:15 – IPEN

13:15 – 15:00 – Lunch

15:00 – 15:20 – UFS
15:20 – 15:40 – UFABC
15:40 – 17:00 - IFSC
17:00 – 19:00 – Posters (with beverages)
18:30 – 19:00 – Meeting Management Committee
20:00 - Dinner

Fri, Feb 14th

9:00 – 9:50 - Plenary Lecture #2 – “**Antibacterial Properties of Microscale Surface Topographies Generated by Ultrafast Laser Processing**” Rainer Kling, AlphaNov, France –

10:00 – 11:30 – UFPE

11:30 – 11:50 – Coffee Break

11:50 – 12:05 – PUC-Rio
12:05 – 12:20 – UFAL - Arapiraca
12:20 – 12:40 – UFU

12:40 – 13:10 - FATEC

13:10 – 13:30 – Closing Remarks and Evaluation

13:30 – 15:00 – Lunch

15:00 – 18:00 – Networking and Visit to IQ-UNESP Labs
Free evening – dinner on your own

Saturday, Feb 15 - Return to Campinas for those who fly from there, bus time to be informed later.



Plenary Presentations

Plenary Lecture #1 – Thursday, February 13, 2020

Controlling Optical Excitation and Dynamics for Biophotonics and Nanophotonics

Paras N. Prasad

Institute for Lasers, Photonics, and Biophotonics

University at Buffalo, State University of New York

Buffalo, New York 14260, USA

Abstract

This talk will present our work on controlling linear and non-linear optical excitations and subsequent relaxations in modeling guided novel molecular structures and nano-assemblies. Their applications to Biophotonics and Nanophotonics are our major focus which will be exemplified. One example for biophotonics is photosensitizers (PSs) with unique molecular design that show remarkably enhanced ISC efficiency (Φ_{ISC}), switching from nearly 0 to 90%, via increasing the degree of twisting produced by pH change. We demonstrated the concept of smart PDT (S-PDT), where pH-induced reversible twisting maximizes the ISC rate, and thus enables strong photodynamic action only under a pathological stimulus (such as pH, hypoxia or enzyme). Another example is a molecular design where multiple channels of nonradiative decay of multiphoton excitations to enable efficient nonlinear photoacoustic imaging. Another new directions in biophotonics utilizes integration of multiphoton imaging, Ramanomics and two-photon FLIM for cellular diagnostics and lipid profiling (Lipidomics) to quantify a disease stage. An exciting direction is neurophotonics for functional imaging of brain and simultaneous enabling of optogenetics for regioselective stimulation of neurons.

For nanophotonics, 2-D materials have emerged as a novel class of materials that involve both covalent in-plane bonding and noncovalent interactions in between planes to produce modulation and control of optical properties via both types of interactions. In these quantum materials, quantum effects can be observed/registered over a much wider range of energy and length scales than in conventional quantum confined materials. Examples presented from our work are perovskites bridged through conjugated aggregation enhanced dyes where electronic coupling between the inorganic layers and the organic pi-electron system can lead to significantly enhanced luminescence, nonlinear optical and multiphoton properties. Applications perused are in photonics communications, LIDAR and sensor technology. Another example is bismuthene/bismuth oxide (Bi/BiOx)-based lateral nano-heterostructure, synthesized through regioselective oxidation, which can generate ${}^1\text{O}_2$ effectively under normoxia, but also produces OH and H_2 , under hypoxic conditions to effect PDT by both type I and type II mechanisms.

Some new directions are nonlinearity in a medium with epsilon near zero; interaction of structured light carrying both spin angular momentum and orbital angular momentum, with a chiral medium coupling electric and magnetic dipoles, to induce a giant and wavelength tunable chiro-optic response ; multiphoton down conversion (Quantum cutting from UV or Visible to Visible or IR) via multistep-cascaded energy transfer in a core-multishell nano-architecture ; stimulated Mie scattering and light manipulation in photonic structures and nanocomposites. The talk will conclude with a presentation of multidisciplinary opportunities

References:

1. P.N. Prasad “Biophotonics” John Wiley & Sons, New York (2003).
2. P.N. Prasad “Nanophotonics”, John Wiley & Sons, New York (2004).
3. P.N. Prasad “Introduction to Nanomedicine and Nanobioengineering” Wiley (2012)

Biography: PARAS N. PRASAD, Ph.D. is SUNY Distinguished Professor of Chemistry, Physics, Electrical Engineering, and Medicine; the Samuel P. Capen Chair of Chemistry; and the Executive Director of the Institute for Lasers, Photonics and Biophotonics at the University at Buffalo (SUNY). Scientific American named him among the top 50 sciences and technology leaders in the world in 2005. He has authored over 800 publications; four monographs that greatly influenced the fields of (1) organic nonlinear optics, (2) biophotonics, (3) nanophotonics, and (4) Nanobioengineering and nanomedicine; edited eight books; and holds numerous patents. His many awards for research excellence include the American Chemical Society's Peter Debye Award, the Morley Medal and Schoellkopf Medal ; SPIE's highest honor, the President's Gold medal; Optical Society OSA's Michael Feld Biophotonics award; IEEE's Pioneer Award in Nanotechnology;; Guggenheim Fellowship; Sloan Fellowship; Western New York Health Care Industries Technology/Discovery Award; SUNY Excellence in the Pursuit of Knowledge award; University at Buffalo's first Innovation Impact award; University at Buffalo's highest honor of President's Medal. He is a fellow of the American Physical Society, Optical Society, SPIE, and IEEE, and listed among Thompson Reuters "Highly Cited Researchers". He has Honorary Doctorates from KTH in Sweden, the Aix-Marseille University in France, MEPhI in Russia, and Federal University of Pernambuco in Brazil. Globally, his technologies have produced nine spin-off companies, including publicly traded Nanobiotix, now in advanced clinical trials for cancer therapy.

Plenary Lecture #2 – Friday, February 14, 2020

Plenary Lecture #2 – “Antibacterial Properties of Microscale Surface Topographies Generated by Ultrafast Laser Processing” Rainer Kling, AlphaNov, France

Abstract will appear in the Proceedings of the II INFO Workshop

Biography: Rainer Kling graduated at the University of Karlsruhe in Electrical Engineering and Optical Communication and received a Ph.D. in 1997 on Plasma Physics and pulsed Electronic ballasts. From 1998 to 2008 he worked for Radium GmbH and OSRAM GmbH as Head of R&D and set up a Global Business Unit: Topics: Lamps & Power Electronics for Automotive, General Lighting, Display, UV Water, Strategy and Innovation Management. From 2002 -2011 he has been working at Laser Center in Hannover (LZH) where he headed the Department of Production and Systems Technology. In 2008, he was appointed full Lecturer at Light Technology Institute, at Karlsruhe Institute for Technology, Germany for Plasma Physics, Power Electronics, Displays and Visible Light Communication, Lighting Design and Radiometry. Since 2011, Rainer Kling is business unit manager for micro machining at ALPhANOV, France with strong expertise in ultrashort pulsed laser applications. These functions and his expertise in glass processing, photovoltaic technologies, and micro machining led him to responsibilities in various prestigious organizations e.g. conference co-chair at Photonics West, SPIE senior member, reviewer for various scientific journals etc. He holds a PhD in Engineering Physics of the Leibniz University of Hannover and has published over 100 papers and conference presentations.

Progress Reports – Oral presentations

 Araraquara	IQ/UNESP and Associated groups Sidney Ribeiro
 UNIVERSIDADE FEDERAL DO VALE DO SÃO FRANCISCO	Soft matter-based materials for photonics, Helinando P. de Oliveira, PPG Ciências dos Materiais, UNIVASF
 CENTRO UNIVERSITÁRIO TABOCA DE ALMEIDA	Progress Report Claudia Brainer
	Progress Report Denise Zzell and Wagner Rossi
 Universidade Federal do Santa Catarina	Progress Report Joatan Rodrigues Jr
 Universidade Federal do ABC	Lasers for diagnosis and treatment of radiation-related caries, oral diseases and decontamination of materials, Patricia A. Ana, UFABC, SP.
 UNIVERSIDADE DE SÃO PAULO Instituto de Física de São Carlos	Progress Report Cleber Mendonça
 UFPE	<ol style="list-style-type: none"> 1. 15 minutes report on the activities in the Nonlinear Optics Laboratory at Recife, Cid B. de Araújo, Departamento de Física, UFPE. 2. 2017-2019 activities in the Laboratory of Photonics and Biophotonics, Anderson S L Gomes, DF/UFPE. 3. Plasmonics at UFPE: From Medical Applications to Solar Energy Harvesting, Renato E. de Araujo, EES, UFPE 4. Progress report: Nano Optics Laboratory and the INFO Project, Leonardo de Souza Menezes, DF/UFPE 5. Progress Report, Adriana Fontes and Beate Saeseger, Ciências Farmacêuticas, UFPE 6. Progress Report, Celso Melo, DF/UFPE 7. Development of an ultrabroadband OPA light source in near IR, E. L. Falcão-Filho, DF/UFPE.
 PUC	Photonics Research at the Optoelectronics Lab Physics Department, PUC-Rio , Isabel C.S. Carvalho, PUC-Rio.
 UNIVERSIDADE FEDERAL DO ALAGOAS	Fundamental Optical Studies at Campus Arapiraca of Federal University of Alagoas , André L. Moura, UFAL/Arapiraca, AL.
 Universidade Federal de Uberlândia	Progress Report Viviane Pilla
 Faculdade de Tecnologia de São Paulo	Progress Report Luciana Kassab

Posters

1. **Spatial Self-Phase Modulation and Random Lasing in Coumarin Dyes**, Jessica E. Q. Bautista, Cássia Corso, Manoel L. Silva-Neto, Cid B. de Araújo, Physics Department, UFPE
2. **Second-Order Optical Nonlinearity of Gold Nanoclusters with six Atoms** Renato Barbosa-Silva, Manoel L. Silva-Neto, Dipankar Bain, Amitava Patra, and Cid B. de Araújo Physics Department, UFPE
3. **Nonlinear Optical Absorption and Harmonic Generation In Silver Nanowires Array** Manoel L. Silva Neto, Jessica E. Q. Bautista, Albert S. Reyna, Eduardo P. Hernandez, Edilson L. Falcão Filho and Cid B. De Araújo, Physics Department, UFPE
4. **(Metal nanoparticles)/(conducting polymer) composites: properties and possible biomedical applications**, Gabriela P. Ratkovski, Elton Marlon A. Lima, Hanna A. Nobrega and Celso P. de Melo, Physics Department, UFPE.
5. **Functionalized silver ferrite (AgFeO_2) particles as a novel fluorescent platform for the development of diagnostic sensors**, Lizeth C. Mojica-Sánchez, Gabriela P. Ratkovski, Bruna G. Maciel, Romário J. da Silva, Celso P. de Melo, Physics Department, UFPE.
6. **A Novel Nucleic Acid Fluorescent Sensing Platform Based on Nanostructured Films of Intrinsically Conducting Polymers**, Graciela C. Pedro, Filipe D. S. Gorza, Romário J. da Silva, Kamila T. O. do Nascimento, Juan C. Medina-Llamas, Alicia E. Chávez-Guajardo, José J. Alcaraz-Espinoza, Lizeth C. Mojica-Sánchez, Celso P. de Melo, Physics Department, UFPE.
7. **Spinel cobalt ferrite nanoparticles for sensing phosphate ions in aqueous media and biological samples**, Gabriela P. Ratkovski; Kamila T. O. do Nascimento; Graciela C. Pedro; Romário J. da Silva; Edson S. Reis; Filipe D. S. Gorza; Bruna G. Maciel; Lizeth C. Mojica-Sánchez, Celso P. de Melo, Physics Department, UFPE.
8. **Optical Amplification of Nd^{3+} doped PbO-GeO_2 Glasses with Silver Nanoparticles**, C. D. S. Bordon, R. M. Gunji, D. M da Silva, M.M. Martins, L. R. P. Kassab, FATEC, SP
9. **Influence of Oxygen Flow on the Physical Morphology of Sputtered $\text{TeO}_2\text{-ZnO}$ Thin Films with and without Au incorporation**, L. Bontempo, S.G dos Santos Filho, L. R. P. Kassab, FATEC, SP
10. **Influence of TiO_2 Nanoparticles on the Optical Properties of $\text{Yb}^{3+}/\text{Er}^{3+}$ Doped $\text{GeO}_2\text{-PbO}$ Glasses**, L. R. P. Kassab, R. M. Gunji, J. A. M Garcia, FATEC, SP.
11. **Metal-Dielectric Nanocomposites Based on Germanium and Tellurium Oxide Glasses for Photonic Applications**, L. R. P. Kassab, C. B de Araújo , N. U. Wetter , D. M da Silva, FATEC, SP.
12. **Influence of Silver Nanoparticles on The Efficiency Enhancement of Eu^{3+} Doped Tellurite Glasses Covered Solar Cells**, G. R. S. Mattos, J. A. M. Garcia, C. D. S. Bordon, R. K. Onmori, L. R. P. Kassab, FATEC, SP.

- 13. Texturization of engine components with shaped ultrashort laser pulses**, Wagner de ROSSI and Alexandre VIEIRA, IPEN, SP
- 14. Development of a microfluidic circuit to atmospheric analyses**, A. A. Gomes; J. O. W. V. Bustillos; A. S. Vianna Jr; E. Landulfo, W. de Rossi, IPEN, SP.
- 15. Development and control of microfluidic systems**, Cristhiano C. Herrera, Ricardo E. Samad, Nilson D. Vieira Jr, Wagner de Rossi, IPEN, SP
- 16. Management Cross-Borders Frontiers: Organizational Forms Besides Technology Innovation**, Aline Araujo Perini, Anderson Zanardi de Freitas, IPEN, SP.
- 17. Effects of Photobiomodulation on Breast Tumor- Bearing Mice Before Radiotherapy**, C.R. Silva, M.S. Ribeiro, IPEN, SP.
- 18. Methylene Blue-Mediated Photodynamic Activity on Permeabilization of Reconstituted Giant Unilamellar Vesicles from Leishmania Promastigote Membranes**, Maressa Donato, Ismael P. Sauter, Bruna R. Casadei, Rosangela Itri, Martha S. Ribeiro, IPEN, SP.
- 19. Characterization and evaluation of Biosilicate associated with Q-switched Nd:YAG laser for prevention of radiation-related caries**, Graziela S. Pereira, Daniela C. Figueiredo, Matheus Del-Valle, Juliana Daguano, Patricia A. Ana, UFABC, SP.
- 20. In vitro effects of the Q-switched Nd:YAG laser when associated or not to Biosilicate® on the progression of radiation-related caries**, Daniela C. Figueiredo, Juliana Daguano, Patricia A. Ana, UFABC, SP.
- 21. Optical effects of radiotherapy on root dentin assessed by optical coherence tomography**, Daniela C. Figueiredo, Matheus Del-Valle, Pedro C. C. Castro, Juliana Daguano, Denise M. Zezell, Patricia A. Ana, UFABC, SP.
- 22. Effects of high-intensity Diode laser on the surface of titanium dental implants and its influence on cellular adhesion**, Carla N. Faustino, Christiane B. Lombello, Patricia A. Ana, UFABC, SP.
- 23. Effects of photodynamic therapy as agent Disinfectant in hospital materials**, Matheus Del-Valle, Emery C.C.C. Lins, Patricia A. Ana, UFABC, SP.
- 24. Cramoll and BmOLL Lectins Conjugated to Quantum Dots for Glycobiological Studies**, Oliveira, W.F., Cabrera, M.P., Santos, N.R.M., Ferreira, S.A.O., Napoleão, T.H., Paiva, P.M.G., Neves, R.P., Silva, M.V., Coelho, L.C.B.B., Santos, B. S., Cabral Filho, P.E., Fontes, A., Correia, M.T.S., Departamento de Biofísica e Radiobiologia, UFPE.
- 25. Quantum Dots and Iron Oxide Nanoparticles Coated with Polyaniline as Nanoprobes for Biological Applications**, Cabrera, M. P., Lopes, I. S., Oliveira, W. F., Cabral Filho, P. E., Santos, B. S., Pereira, G. A. L., Fontes, A., Departamento de Biofísica e Radiobiologia, UFPE.
- 26. Antimicrobial Photodynamic Therapy Mediated by Zinc Porphyrin**, Souza, S. O.; Souza, T. H.; Raposo, B. L.; Andrade, C. G.; Cabral Filho, P. E.; Santos, S. B;

Sarmento-Neto, J. F. ; Rebouças, J. S.; Figueiredo, R. C. B.; Cabral, F. V.; Ribeiro, M. S.; Fontes, A., Departamento de Biofísica e Radiobiologia, UFPE.

27. **Random lasing in self-assembled zinc oxide nanowires grown by chemical bath deposition technique**, Avishek Das, Manoel L. da Silva-Neto, Anderson Stevens Leônidas Gomes, Departamento de Física, UFPE.
28. **Preparation and Characterization of Silver Nanoprisms for Random Laser Application**, Raquel E. M. Lins, Audrey N. Andrade, Anderson S. L. Gomes, Departamento de Física, UFPE.
29. **Curcumin loaded microcapsule for photodynamic applications**, Pámina R. Silva, Antônio G. de Castro Neto, Juliana de S. Alencar Falcão, Adriana Fontes, Beate S. Santos, Dept. Ciências Farmacêuticas, UFPE.
30. **Bacterial activity of Silver-Poly(styrene sulfonate) stabilized nanoprisms**, Cláudio H. Rodrigues, Evanisia A. G. Araújo, Thiago P. Nascimento, Adriana Fontes, Juliana S. Alencar Falcão, Christiane P. Borges, Goreti Pereira, Ana Lúcia F. Porto, Beate S. Santos, Dept. Ciências Farmacêuticas, UFPE.
31. **New one-pot aqueous synthesis of plasmonic copper chalcogenides**, Jailson José da Silva, Wedja Maciel dos Santos, Rafael da Silva Fernandes, Adriana Fontes, Giovannia Lima de Araújo Pereira, Goreti Pereira, Claudete Fernandes Pereira, Beate Saegesser Santos, Dept. Ciências Farmacêuticas, UFPE.
32. **One-pot aqueous synthesis of Ag_2X quantum dots**, Izabel Gomes de Sobrinha Sobrinha, Isabelle Moraes Amorim Viegas, Ingrid Walessca Valeriano Gonçalves, Beate S Santos, Adriana Fontes, Claudete Fernandes Pereira, Goreti Pereira, Giovannia Araújo Pereira, Dept. Ciências Farmacêuticas, UFPE.
33. **Development of bimodal nanoprobes based on Quantum Dots and paramagnetic chelates**, G. M. Albuquerque, I. G. Souza Sobrinha, P. E. Cabral Filho, A. Fontes, B. S. Santos, G. Pereira, G. A. L. Pereira, Dept. Ciências Farmacêuticas, UFPE.
34. **Study of The Influence of Polymeric Matrices on Photodynamic Action of Methylene Blue**, Marques Leonel Rodrigues da Silva; Claudio Henrique Rodrigues da Silva; Josenildo Pessoa Sena; Bruna Pereira da Silva; Juliana de Souza Alencar Falcão; Adriana Fontes; Maria Goreti Carvalho Pereira; Giovannia Araujo de Lima Pereira; Beate Saegesser Santos, Dept. Ciências Farmacêuticas, UFPE.
35. **Implementation of a Nanomagnetometer using a Single Nitrogen-Vacancy Defect in Nanodiamond**, E. D. C. Sánchez, A. R. Pessoa, A. M. Amaral, and L. de S. Menezes, Departamento de Física, UFPE.
36. **Purcell Effect in a Single Nitrogen-Vacancy Defect in Nanodiamonds Embedded in Liquid Crystal: An Experiment in Progress**, Jefferson A. O. Galindo, Leonardo de S. Menezes, Departamento de Física, UFPE.
37. **Speckle-free dental image using Pyridine 2 random laser**, Sandra J. M. Carreño de Holanda, Izabella Lins, Renato E. de Araujo e Anderson S. L. Gomes, Departamento de Eletrônica e Sistema, UFPE.

- 38. Temperature Sensing Using LiBaPO₄:Nd³⁺ Microcrystals**, A. S. Laia, D. A. Hora, M. V. dos S. Rezende, J. J. Rodrigues Jr, M. A. R. C. Alencar, Departamento de Física, UFS.
- 39. Experimental and Theoretical Study of the Linear and Nonlinear Optical Properties of Pyrazoline Derivatives**, Raiane S. Araújo, Aline M. Alcântara, A. C. Brandão-Silva, Luis M. G. Abegão, Yago P. de Souza , Josefredo R. Pliego Jr , R. Machado, Marcelo S. Valle , J. J. Rodrigues Jr., M. A. R. C. Alencar, Departamento de Física, UFS.
- 40. Temperature Dependence of Photoluminescence n Nd³⁺ Doped TiO₂ Pastille In Different Thermal Annealing**, Lopes, J.N., Filho, J.C., Messias, D.N., Pilla, V., Silva, A.C., Dantas, N.O. and Andrade, A.A., Departamento de Física, UFU, MG
- 41. Effects of the potassium oxide in the thermal coefficient of the optical path in P₂O₅-Al₂O₃-Na₂O-K₂O phosphate glasses**, Filho, J.C., Zilio, S.C., Messias, D.N., Pilla, V. and Andrade, A. A. , Departamento de Física, UFU, MG
- 42. Study of Potential Hydrogen Dependence on Natural Dye for Biomonitoring** , M. Thomaz, S. R. de Lima, D. N. Messias, A. A. Andrade, and V. Pilla, UFU, MG
- 43. Fluorescence Quantum Yield of Natural Dye and Fungicide Bioapplication**, S. R. de Lima, D. N. Messias, A. A. Andrade, and V. Pilla , UFU, MG.
- 44. Antibacterial properties of nanoscale polymeric materials**, Fernando Antonio Gomes da Silva Jr., Helinando P. de Oliveira, PPG Ciências dos Materiais, UNIVASF, PE/BA.
- 45. Flexible microfibers for use as random lasers**, Manoel L. da Silva-Neto, Mário C. A. de Oliveira, Christian T. Dominguez, Raquel E. M. Lins, Nikifor Rakov, Cid B. de Araújo, Leonardo de Souza Menezes, Helinando P. de Oliveira & Anderson S. L. Gomes, PPG Ciências dos Materiais, UNIVASF, PE/BA.
- 46. Polydispersed Nd³⁺:YVO⁴⁺SiO₂ powders for highly efficient random lasers**, Jessica Dipold, Danilo A. A. da Silva, Allan Bereczki, E. Jimenez-Villar and Niklaus U. Wetter, IPEN, SP
- 47. Optical Properties of Niobium and Tantalum-Based Oxide Glasses and Transparent Glass-Ceramics**, Gael Poirier1, Fabia C. Cassanjes, Lia M. Marcondes2, Cristiano R. Da Cunha1, Gislene Batista, Thierry Cardinal, Evelyne Fargin, Marc Dussauze, Vincent Rodriguez, UNESP, Araraquara, SP
- 48. Fluorogermanate Photo-Thermo-Refractive Glasses**, Valentina Gacha Mendoza1, Gael Yves Poirier, Marcelo Nalin, Danilo Manzani, UNESP, Araraquara, SP
- 49. Synthesis of transparent magneto-luminescent glass-ceramics with high concentrations of Tb³⁺**. Leonardo Vieira Albino, Marcelo Nalin. UNESP, Araraquara, SP
- 50. Controlling the reduction of Te⁴⁺ in tellurite glass by using fs-laser irradiation**
Renato G. Capelo1, Valmor R. Mastelaro2, Gaël Y. Poirier3, Danilo Manzani, UNESP, Araraquara, SP

- 51. Synthesis of titanium-phosphate glass containing silver nanoparticles on surface for investigation of SERS activity and photocatalysis**, Thiago I. Rubio, Daniel S. Francisco, Danilo Manzani, UNESP, Araraquara, SP
- 52. Synthesis and solubility studies of a multicomponent glass for glass fertilizer application**, Ana Caroline A. de Moura, Danilo Manzani, Eduardo B. Ferreira, Renan B. Ruocco, Ana Rita A. Nogueira, UNESP, Araraquara, SP
- 53. Biopolymeric Microparticles as Encapsulation Systems for Controlled Release of Drugs and Fungi**, Mayté Paredes Zaldivar, Lucas Noboru Fatori Tizan, Maria Joaquina Scarpa, Jean Carlos Ferreira Machado, Andréia Bagliotti Meneguin, Matheus Porto, Hernane Da Silva Barud., UNESP, Araraquara, SP
- 54. Development and Characterization ff 3d Bioprinting Bioinks Based on Hydrogel Biopolymers**, Lucas Noboru Fatori Trevizan; Mayté Paredes Zaldivar; Diego Silva Batista; Merielen Silva Albuquerque; Paula Gonçales Patto Dos Santos; Hernane Da Silva Barud, UNESP, Araraquara, SP
- 55. Nanocellulose-Based Platforms For Biomedical And Photonic Applications**
Amanda M. Claro, Lais R. De Lima, Andreia S. S. Monteiro, Isabella S. Gonçalves, Gabriela A. Da Silva, Nayara C. Do Amaral, Gabriel L. Martins, Viviane Ferreira, Hernane S. Barud., UNESP, Araraquara, SP
- 56. Research activities on the synthesis and applications of photonic materials at the Laboratory of Inorganic and Vitreous Materials (LaMIV / IQSC-USP)**, Danilo Manzani, Renato Capelo, Giovanna B. Gonçalves, Thiago I. Rubio, Joacília M. M. de Souza, Ana Caroline A. Moura, Daniel S. Francisco, Bruno Donadelli, Leandro E. Olivetti, Giulia A. Santos, Vinicius L. Souza, Marina A. Silva, Luis H. D. Porfirio, UNESP, Araraquara, SP
- 57. Up - Conversion study of NaY(MoO₄)₂:Er³⁺ synthesized by spray pyrolysis**, Douglas Luis da Silva, José Maurício Almeida Caiut, USP Ribeirao Preto, SP
- 58. Photoactive metal sulfide and metal oxide modified bacterial cellulose aerogels for environmental applications**, Elias Paiva Ferreira Neto, Thais Caroline de Almeida da Silva, Thales Mascarelli, Sajjad Ullah, Ubirajara Pereira Rodrigues Filho, Sidney José Lima Ribeiro, UNESP, Araraquara, SP
- 59. Spectroscopic study of the Pr³⁺ 4f-5d transitions at VUV**, Eloisa Garibalde Hilario, Lucas Carvalho Veloso Rodrigues, José Mauricio Almeida Caiut, USP Ribeirao Preto, SP
- 60. Synthesis of Micro and Submicrometric Spherical Particles of Ruby**, Rocha, E. G.; Caiut, J. M. A., USP Ribeirao Preto, SP
- 61. Upconverting Er³⁺/Yb³⁺ co-doped yttrium tantalates and niobates working as primary thermometers**, F.H. Borges, F.J. Caixeta, J. Martins, C.D.S. Brites, L.D. Carlos, R.A.S. Ferreira, and R.R Gonçalves, USP Ribeirao Preto, SP
- 62. Multifunctional heater-thermometer based on upconverting Er³⁺/Yb³⁺ organic-inorganic hybrids**, F. J. Caixeta, A. R. N. Bastos, A. M. P. Botas, L. S. Rosa, V. S. de Souza, M. A. Cardoso, R. A. S. Ferreira, R. R. Gonçalves, USP Ribeirao Preto, SP

- 63. Cylindric Luminescent Solar Concentrators**, Francis D.R. Garcia, Fernando G. Silva, Edison Pecoraro, Sandra F. H. Correia, Luís D. Carlos, Rute A. S. Ferreira and Sidney J. L. Ribeiro, UNESP, Araraquara, SP
- 64. Silk Fibroin and Cellulose Nanocrystal Composite Films**, Francisco R. Torres, José Maurício A. Caiut, USP Ribeirao Preto, SP
- 65. Hybrid sol-gel as precursors towards additive manufacturing of photonic materials**
Gabriel Toshiaki TAYAMA, Silvia Helena SANTAGNELI, Younes MESSADDEQ, UNESP, Araraquara, SP
- 66. CdSe quantum dots contained in polyurethane films for photonic applications**
Giovanna F. B. Gonçalves, Agnieska Tercjak, João B. S. Junior, Wagner L. Polito, Sidney J. L. Ribeiro, Danilo Manzani, UNESP, Araraquara, SP
- 67. Synthesis, structural, and spectroscopic properties of Eu³⁺ in A₂B₂O₇ (A=Y, Gd; B=Ti, Hf, and Sn) materials**, G.P. Hernandes1, D.S.H. Oliveira1, M.V. Guidorzi1, F.H. Borges1, H.P. Labaki1, and R.R. Gonçalves, USP Ribeirao Preto, SP
- 68. Visible and NIR to NIR emission in Tm³⁺:Yb³⁺ co-doped Yttrium Tantalates for Bioimaging application**, Hayra do Prado Labaki, Fernanda H. Borges, Fábio J. Caixeta, and Rogéria Rocha Gonçalves, USP Ribeirao Preto, SP
- 69. Pr³⁺-doped and Pr³⁺/ Yb³⁺-co-doped yttrium tantalates: Structural and Luminescent properties for potential application in Solar Cells**, Hayra do Prado Labaki, Fernanda H. Borges, Fábio J. Caixeta, and Rogéria Rocha Gonçalves, USP Ribeirao Preto, SP
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- 72. Imunossensor para Detecção de *Escherichia Coli*104:H4 com Base na Imobilização do Anti-*E. Coli* em filmes Layer-By-Layer**, Elen Rute Lira Gomes, Elenice Deffune, Marli Leite de Moraes, UNIFESP, SP
- 73. Detecção eletroquímica do anti-βA40 utilizando eletrodos de ouro e platina para o diagnóstico da doença de Alzheimer**, Thaís Domingos de Castro Silva Souza, Anna Laura Yuri Yokomichi, Elenice Deffune, Marli Leite de Moraes, UNIFESP, SP
- 74. Imunossensor para a detecção de autoanticorpos como biomarcadores da doença de Alzheimer**, Anna Laura Yuri Yokomichi1, Thaís Domingos de Castro Silva Souza1, Júlio Cesar Monteiro1, Ana Lívia de Carvalho Bovolato2, Elenice Deffune2, Sidney José Lima Ribeiro3, Marli Leite de Moraes, UNIFESP, SP

- 75. Luminescent studies of visible-transparent Er³⁺/Yb³⁺ co-doped tellurite glass-ceramics containing Bi₄TeO₈ cubic crystals**, Joacilia M. M. Souza, Karmel O. Lima, Rogéria R. Gonçalves, Marcelo Nalin, Gaël Y. Poirier, Danilo Manzani, USP, Ribeirao Preto, SP
- 76. Phosphate Glasses Containing Cobalt Platinum Magnetic Nanoparticles**, Juliane R. Orives, Wesley R. Viali, Sidney J. L. Ribeiro, Marcelo Nalin, UNESP, Araraquara, SP
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- 79. Synthesis and Structural Characterization of High Porous YAG Doped with Lanthanides Ions**, Luan do N. Passini, Roberta S. Pugina e José Maurício A. Caiut, USP Ribeirao Preto, SP
- 80. Synthesis of Lanthanide Doped Yttrium Oxide and Yttrium Silicate for Photonics and Biophotonics Applications**, Gomes, L. F., Santos, L. F., Gonçalves, R. R., USP Ribeirao Preto, SP.
- 81. Recent Contributions in the Characterization of Materials by Raman Spectroscopy** Gustavo F. S. Andrade, Luiz Fernando C. de Oliveira, UFJF, MG
- 82. Structural and spectroscopy study on Nd-doped lanthanum niobate aiming for NIR-II bioimaging tools**, Mateus G. Manfré, Leonardo A. dos Santos, Rogéria R Gonçalves, USP Ribeirao Preto, SP
- 83. Multifunctional materials developed by Unifran and its luminescent applications** Eduardo José Nassar, Willian Eurípedes do Nascimento Mello, Susane Bonamin Moscardini, Nathalia da Silva Marques, Henrique José da Silva, Jéssica Potomatti Batista, Lucas Alonso Rocha, UNIFRAN
- 84. MoS₂ and WS₂ nanosheets obtained by liquid phase exfoliation**. Thales Mascarelli, Elias Paiva Ferreira Neto, Sidney José Lima Ribeiro, UNESP, Araraquara, SP
- 85. Nd³⁺:YAG and Silk Fibroin Compounds for Photonic Applications**, Roberta S. Pugina , Lauro J. Q. Maia and José Maurício A. Caiut , USP Ribeirao Preto, SP
- 86. Femtosecond laser micromachining in tantalum and niobium germanate glasses**, Lia Mara Marcondes, Lucas Konaka Nolasco, Sabrina Nicoleti Carvalho dos Santos, Cleber Renato Mendonça, Gael Poirier, Marcelo Nalin. USP Ribeirao Preto, SP
- 87. Hybrid aerogels of bacterial/organosilic cellulose for adsorption of rare earth elements**. Thais C. A. Silva (PG), Elias P. Ferreira Neto (PQ), Sidney J.L. Ribeiro (PQ), UNESP, Araraquara, SP
- 88. White light emission based on rare earth doped niobium germinate**, V.S. Souza, R.R. Gonçalves, USP Ribeirao Preto, SP

- 89. Broadband NIR emission on rare earth doped SiO₂-M₂O₅ (M = Nb, Ta) planar and channel waveguides**, F. J. Caixeta1, K. O. Lima, F. T. Aquino, J. L. Ferrari, C. R. Mendonça, R. R. Gonçalves, USP Ribeirao Preto, SP
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