

Objective

Integrate my expertise and passion in studying quantum phenomena and nanostructures to the development of cutting-edge technology. Apply new ideas and concepts in hitherto unexplored limits, and provide important new improvements for solid-state quantum science.

Experience

Research Associate at Syracuse University 10/2010 - Actual

- Working at Matthew Lahaye Lab was responsible for setup his new low temperature laboratory designed to probe quantum properties of mechanical resonators using superconductor qubits (CPB, Transmons). Also, responsible for the design, fabrication (CNF - Cornell) and measurement of the samples at ultra-low temperature (<30 mK) using at low-noise electronics. Also working on the development of a theoretical protocol for measurement of fluctuation theorems in quantum systems using CPB qubits
- At Britton Plourd's Lab started the development of hybrid Left/Right Handed Transmission Lines meta-materials coupled to qubits aiming the preparation of multipartite entangle states.

Research Associate at University of Campinas 10/2008 - 09/2010

- Worked at Center for Semiconductor Components developing nano-devices based on carbon nanotubes and graphene cover with nanoparticles for gas sensor for Petrobras Oil Company. Responsible for development of nano-metric low consuming oxygen gas sensor and the patent of the technology.

Education

University of Campinas - Brazil 08/2008

PhD in Condensed Matter Physics - Magnetic Properties of Gd-Cr Thin Films Alloys.

University of Campinas 06/2003

MS in Condensed Matter Physics - Study of the Deposition Process and Properties of Tungsten Oxide Films Obtained by a New Deposition Technique.

University of Campinas 10/2001

BS in Physics

Skills

Low-temperature Physics: Dilution Refrigerators • Superconducting qubits (CPB/Transmon) • NEMS, MEMS • Low-Noise electronics- DC, MHz, GHz • E-beam- and Photo-lithography, micro and nanofabrication, Clean room • SEM, Focus Ion Beam • Thin film deposition: Sputtering, e-beam, EECVD, MOCVD, PECVD • Software: Linux, C, Python, KLayout, L-Edit, CAD, Inkscape, etc. • Vacuum System Design, Rutherford Back Scattering • Raman and FTIR spectroscopy • Magnetic Measurement • Carbon Nanotubes and Graphene deposition • Ion implantation • Optical Spectroscopy.

Papers

1. HAO, YU, **ROUXINOL, FRANCISCO**, LAHAYE, M. D.. 2014.
Development of a broadband reflective T-filter for voltage biasing high-Q superconducting microwave cavities In Applied Physics Letters. , v.105, 222603
2. Gadioli, G.Z., **Rouxinol, F.P.**, Gelamo, R.V., Cardoso, L.P., Gama, S., DE MORAES, M.A. BICA. 2013.
Magnetic and Structural Studies on Nanostructured Gd/Cr Multilayer Films In Thin Solid Films. , v.1, 1
3. **Rouxinol, F.P.**, Gadioli, G.Z., Gelamo, R.V., dos Santos, A.O., Cardoso, L.P., Gama, S., Bica de Moraes, M.A.. 2011.
Magnetic properties of metastable Gd₂Cr alloys In Journal of Magnetism and Magnetic Materials. , 2005-2011
4. Remédios, C. M. R., DOS SANTOS, A. O., Lai, X., Roberts, K. J., Moreira, S. G. C., Miranda, M. A. R., de Menezes, A. S., **ROUXINOL, F. P.**, CARDOSO, L. P. 2010.
Experimental Evidence for the Influence of Mn 3+ Concentration on the Impurity Incorporation and Habit Modification Mechanism of Potassium Dihydrogen Phosphate In Crystal Growth & Design. , 100129075428070
5. Gelamo, R. V., **ROUXINOL, F. P.**, VERISSIMO, C., Moraes, M.A. Bica de, MOSHKALEV, S.. 2010.
Gas and Pressure Sensors Based on Multi-Wall Carbon Nanotubes: Study of Sensing Mechanisms In Sensor Letters (print). , v.8, 488-492
6. **Rouxinol, Francisco P.**, Gelamo, Rogerio V., Amici, Renato G., Vaz, Alfredo R., Moshkalev, Stanislav A.. 2010.
Low contact resistivity and strain in suspended multilayer graphene In Applied Physics Letters. , v.97, 253104
7. Soffner, M E, Tedesco, J C G, Mansanares, A M, Gadioli, G Z, **Rouxinol, F P**, Moraes, M A B de, Silva, E C da. 2010.
Thin films of gadolinium investigated by photothermally modulated magnetic resonance In Journal of Physics. Conference Series (Online). , v.214, 012092
8. Gelamo, R.V., **Rouxinol, F.P.**, VERISSIMO, C., Vaz, A.R., Moraes, M.A. Bica de, Moshkalev, S.A.. 2009.
Low-temperature gas and pressure sensor based on multi-wall carbon nanotubes decorated with Ti nanoparticles In Chemical Physics Letters (Print). , v.482, 302-306
9. DURRANT, S, **ROUXINOL, F**, GELAMO, R, TRASFERETTI, B, DAVANZO, C, BICADEMORAES, M. 2008.
Characterization of Si:O:C:H films fabricated using electron emission enhanced chemical vapour deposition In Thin Solid Films. , v.516, 803-806
10. DURRANT, S, TRASFERETTI, B, SCARMINIO, J, DAVANZO, C, **ROUXINOL, F**, GELAMO, R, BICADEMORAES, M. 2008.
Developments in hot-filament metal oxide deposition (HFMOD) In Thin Solid Films. , v.516, 789-793
11. SCARMINIO, J., CATARINI, P. R., URBANO, A., GELAMO, Rogerio Valentin, **ROUXINOL, F. P.**, MORAES, Mário Antônio Bica de. 2008.
Li Diffusion and Electrochromism in Amorphous and Crystalline Vanadium Oxide Thin Film Electrodes In Journal of the Brazilian Chemical Society (Online). , v.19, 788
12. Gadioli, Giovana Z., **Rouxinol, Francisco P.**, Gelamo, Rogerio V., dos Santos, Adenilson O., Cardoso, Lisandro P., Bica de Moraes, Mário A.. 2008.
Magnetism in Gd-W films In Journal of Applied Physics. , v.103, 093916
13. GELAMO, Rogerio Valentin, DURRANT, S. F., TRASFERETTI, Benedito Claudio, DAVANZO, Celso U, **ROUXINOL, F. P.**, MORAES, Mário Antônio Bica de. 2007
Helium ion irradiation of Polymer Films Deposited from TMS-Ar Plasmas. In Plasma Processes and Polymers. , v.4, 489-496
14. GELAMO, Rogerio Valentin, LANDERS, R., **ROUXINOL, F. P.**, TRASFERETTI, Benedito Claudio, MORAES, Mário Antônio Bica de, DAVANZO, Celso U, DURRANT, S. F.. 2007.

XPS Investigation of Plasma-Deposited Polysiloxane Films Irradiated with Helium Ions In Plasma Processes and Polymers. , v.4, 482-488

15. GELAMO, Rogério Valentin, TRASFERETTI, Benedito Claudio, DURRANT, S. F., DAVANZO, C. U., **ROUXINOL, F. P.**, GADIOLI, G. Z., MORAES, Mário Antônio Bica de. 2006.

Infrared spectroscopy investigation of various plasma-deposited polymer films irradiated with 170 keV He⁺ ions In Nuclear Instruments & Methods in Physics Research. Section B. Beam Interactions with Materials and Atoms. , v.249, 162-166

16. Trasferetti, B. C., Gelamo, R. V., **ROUXINOL, F. P.**, Bica de Moraes, M. A., DAVANZO, C. U.. 2005.

Infrared Studies on Films of Carbosilazane and Siloxane Networks In Chemistry of Materials. , v.17, 4685-4692

17. GELAMO, Rogério Valentin, MORAES, Mário Antônio Bica de, **ROUXINOL, F. P.**, TRASFERETTI, Benedito Claudio, DAVANZO, Celso U. 2005.

Modification of Plasma-Polymerized Organosiloxane Films with He⁺, Ne⁺, Ar⁺ and Kr⁺ Ions. In Chemistry of Materials. , v.17, 5789

18. TRASFERETTI, Benedito Claudio, **ROUXINOL, F. P.**, GELAMO, Rogério Valentin, MORAES, Mário Antônio Bica de, DAVANZO, Celso U, FARIA, D L A. 2004.

Berremann Effect in Amorphous and Crystalline WO₃ films In Journal of Physical Chemistry B. , v.108, 12333

19. **ROUXINOL, F. P.**, Trasferetti, B. Cláudio, Landers, Richard, Moraes, Mário A. Bica de. 2004.

Hot-filament metal oxide deposition (HFMOD): a novel method for depositing thin films of metallic oxides In Journal of the Brazilian Chemical Society. , v.15, 324

20. MORAES, Mário Antônio Bica de, DURRANT, S. F., TRASFERETTI, Benedito Claudio, **ROUXINOL, F. P.**, LANDERS, R., SCARMINIO, J., URBANO, A.. 2004.

Molybdenum Oxide Thin Films Obtained by a Novel Hot-Filament Chemical Vapor Deposition Technique In Chemistry of Materials. , v.16, 513

21. TRASFERETTI, Benedito Claudio, GELAMO, Rogério Valentin, **ROUXINOL, F. P.**, MORAES, Mário Antônio Bica de, DAVANZO, C. U., GONCALVES, M. C.. 2004.

Nanocomposites of Amorphous Hydrogenated Carbon and Siloxane Networks Produced by PECVD In Chemistry of Materials. , v.16, 567

22. SCARMINIO, J., URBANO, A., MORAES, Mário Antônio Bica de, **ROUXINOL, F. P.**, TRASFERETTI, Benedito Claudio. 2003.

Caracterização do Eletrocromismo em Filmes de Óxidos de W e Mo Obtidos pelo Aquecimento de Filamentos em Atmosfera de Oxigênio a Baixa Pressão In Revista Brasileira de Aplicações de Vácuo. , v.22, 301-304

23. SCARMINIO, J., MORAES, Mário Antônio Bica de, DIAS, R. C., **ROUXINOL, F. P.**, DURRANT, S. F.. 2003.

Tungsten Oxide Films of High Electrochromic Efficiencies Obtained by Deposition In Electrochemical and Solid-State Letters. , v.6, h9-h12

24. MORAES, Mário Antônio Bica de, DURRANT, S. F., **ROUXINOL, F. P.**. 2001.

Electron Emission Enhanced Chemical Vapor Deposition (EEECVD) for the Fabrication of Diverse Silicon-Containing Films In Thin Solid Films. , v.398, 591

25. MORAES, Mário Antônio Bica de, DURRANT, S. F., **ROUXINOL, F. P.**. 2001.

Gas-Phase and Plasma-Surface Reactions in Radiofrequency Discharges of C₂H₂-N₂-Noble Gas Mixtures In Thin Solid Films. , v.398, 156-162

Book Chapters

1. SUVU, R., GELAMO, Rogerio Valentin, **ROUXINOL, F. P.**, FLACKER, A., GOBBI, A., Moshkalev, S.A.. 2012. Carbon Nanotube- and Graphene-Based Micro-Sensors and Reactors In Nanodevices and Nanofabrication - Selected Publications from Symposium of Nanodevices and Nanofabrication in ICMAT2011, edited by Zhang Qing. e ed 1, 171-177. Cingapura: Pan Stanford Publishing
2. Vaz, A.R., VERISSIMO, C., **ROUXINOL, F. P.**, Gelamo, R. V., Moshkalev, S.A.. 2012. Characterization of nanostructured carbon materials using FIB In Nanofabrication Using Focused Ion and Electron Beams Principles and Applications, edited by Ivo Utke, Stanislav Moshkalev and Phillip Russell. e ed 1, 707-719. Oxford;New York: Oxford University Press
3. **Rouxinol, F P**, GELAMO, Rogerio Valentin, MOSHKALEV, S. 2010. Gas sensors based on decorated carbon nanotubes In Carbon Nanotubes, edited by Jose Mauricio Marulanda. e ed 1. Vol. 1, 357-374. Vukonar: In-Tech

Conference and Meetings

1. **Rouxinol, F P**, LAHAYE, M. D., HAO, YU, Investigations of a voltage-biased microwave cavity for quantum measurements of nanomechanical resonators. APS March Meeting-2015.
2. **ROUXINOL, F**, PLOURDE, B., Hang, H, Superconducting Metamaterial Transmission Line. APS March Meeting-2014.
3. **Rouxinol, Francisco P.**, LAHAYE, M., HAO, H., SHIM, S. Development of a dispersive read-out technique for quantum measurements of nanomechanical resonators. APS March Meeting-2013.
4. **Rouxinol, Francisco P.**, LAHAYE, M. Development of a dispersive read-out technique for quantum measurements of nanomechanical resonators. APS March Meeting-2012.
5. More than 30 others conferences and meetings before 2012