

Mackenzie Presbyterian University  
MackGraphe – Graphene Nanomaterials Research Center  
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## Leandro Seixas, Ph.D.

### Experience

*Jan 2016 – Present* **Assistant Professor Doctor**  
Mackenzie Presbyterian University,  
MackGraphe – Graphene and Nanomaterials Research Center  
School of Engineering  
São Paulo, SP, Brazil

*Jul 2014 – Dec 2015* **Research fellow**  
National University of Singapore,  
Centre for Advanced 2D Materials  
Singapore

*Sep 2012 – Mar 2013* **Visiting researcher**  
Rensselaer Polytechnic Institute,  
Department of Physics, Applied Physics, and Astronomy  
Troy, NY, USA

### Education

*Sep 2009 – Jun 2014* **University of São Paulo (USP)**  
Ph.D., Physics  
São Paulo, SP, Brazil

*Sep 2007 – Sep 2009* **Federal University of ABC (UFABC)**  
Master's degree, Physics  
Santo André, SP, Brazil

*Apr 2003 – Jun 2007* **Federal University of Paraíba (UFPB)**  
Bachelor, Physics  
João Pessoa, PB, Brazil

## Awards & Grants

Dec 2018 Grant: CNPq Universal Award, “*Discovery and Design of 2D Piezoelectric Materials: A First-Principles Perspective*”

Jan 2016 Award: Honorable mention in José Leite Lopes Prize for Best PhD Thesis in Physics (Brazilian Physical Society)

## Scientometrics

*Publications* 21

*h-index* 11 (Google Scholar), 10 (Scopus)

*Citations* 618 (Google Scholar), 529 (Scopus)

## Publications

21. A. S. de Rezende Neto, L. Seixas. *Toward a two-dimensional NbS<sub>2</sub>-based electrode for lithium-ion batteries*. *Int. J. Quantum Chem.*, e26603 (2021).

20. M. Maldonado, M. L. da Silva Neto, P. G. Vianna, H. B. Ribeiro, C. B. de Araújo, C. J. S. de Matos, L. Seixas, A. M. Jawaid, R. Busch, A. J. Ritter, R. A. Vaia, A. S. L. Gomes. *Femtosecond nonlinear refraction of 2D semi-metallic redox exfoliated ZrTe<sub>2</sub> at 800 nm*. *Appl. Phys. Lett.* **118**, 011101 (2021).

19. H. Liu, D. Grasseschi, A. Dodda, K. Fujisawa, D. Olson, E. Kahn, F. Zhang, T. Zhang, Y. Lei, R. B. N. Branco, A. L. Elías, R. C. Silva, Y.-T. Yeh, C. M. Maroneze, L. Seixas, P. Hopkins, S. Das, C. J. S. de Matos, M. Terrones, *Spontaneous chemical functionalization via coordination of Au single atoms on monolayer MoS<sub>2</sub>*. *Sci. Adv.* **6**, eabc9308 (2020)

18. M. Maldonado, A. Das, A. M. Jawaid, A. J. Ritter, R. A. Vaia, D. A. Nagaoka, P. G. Vianna, L. Seixas, C. J. S. de Matos, A. Baev, P. N. Prasad, A. S. L. Gomes, *Nonlinear Optical Interactions and Relaxation in 2D Layered Transition Metal Dichalcogenides Probed by Optical and Photoacoustic Z-scan Methods*. *ACS Photonics* **7**, 3440-3447 (2020).

17. L. Seixas, *Janus two-dimensional materials based on group IV monochalcogenides*. *J. Appl. Phys.* **128**, 045115 (2020).

16. M. Maldonado, M. L. da Silva Neto, P. G. Vianna, H. B. Ribeiro, V. O. Gordo, I. C. S. Carvalho, L. de S. Menezes, C. B. de Araújo, C. J. S. de Matos, L. Seixas *et al.* *Femtosecond Nonlinear Optical Properties of 2D Metallic NbS<sub>2</sub> in the Near Infrared*. *J. Phys. Chem. C* **124**, 15425-15422 (2020).

15. C. L. C. Rodriguez, P. A. R. Muñoz, K. Z. Donato, L. Seixas, R. K. Donato, G. J. M. Fachine, *Understanding the unorthodox stabilization of liquid phase exfoliated molybdenum disulfide (MoS<sub>2</sub>) in water medium*. *Phys. Chem. Chem. Phys.* **22**, 1457-1465 (2020).

14. M. Perchacz, L. Matejka, R. Konefal, **L. Seixas**, S. Livi, J. Baudoux, H. Benes, R. K. Donato, *Self-catalysed coupling between Brønsted-acidic imidazolium salts and epoxy-based materials: a theoretical/experimental study*. *ACS Sustainable Chem. Eng.* **7**, 19050-19061 (2019).
13. H. B. Ribeiro, S. L. L. M. Ramos, **L. Seixas**, C. J. S. de Matos, M. A. Pimenta, *Edge phonons in layered orthorhombic GeS and GeSe monochalcogenides*. *Phys. Rev. B* **100**, 094301 (2019).
12. L. D. Germano, V. S. Marangoni, N. V. V. Mogili, **L. Seixas**, C. M. Maroneze, *Ultrasmall (<2 nm) Au@Pt Nanostructures: Tuning the Surface Electronic States for Electrocatalysis*. *ACS Appl. Mater. Interfaces* **11**, 5661 (2019).
11. A. P. Godoy, P. Ecorchard, H. Beneš, J. Tolasz, D. Smrzová, **L. Seixas et al.**, *Ultrasound exfoliation of graphite in biphasic liquid systems containing ionic liquids: a study on the conditions for obtaining large few-layers graphene*. *Ultrason. Sonochem.* **55**, 279-288 (2019).
10. M. Perchacz, R. K. Donato, **L. Seixas et al.**, *Ionic Liquid-Silica Precursors via Solvent-Free Sol-Gel Process and Their Application in Epoxy-Amine Network: A Theoretical/Experimental Study*. *ACS Appl. Mater. Interfaces.* **9**, 16474 (2017).
9. **L. Seixas**, A. S. Rodin, A. Carvalho, A. H. Castro Neto, *Multiferroic Two-Dimensional Materials*. *Phys. Rev. Lett.* **116**, 206803 (2016).
8. S. P. Koenig, R. Doganov, **L. Seixas et al.**, *Electron doping of ultra-thin black phosphorus with Cu adatoms*. *Nano Lett.* **16**, 2145 (2016).
7. **L. Seixas**, D. West, A. Fazio, S. B. Zhang, *Vertical twinning of the Dirac cone at the interface between topological insulators and semiconductors*. *Nat. Commun.* **6**, 7630 (2015).
6. **L. Seixas**, A. Carvalho, A. H. Castro Neto, *Atomically thin dilute magnetism in Co-doped phosphorene*. *Phys. Rev. B* **91**, 155138 (2015).
5. **L. Seixas**, A. S. Rodin, A. Carvalho, A. H. Castro Neto, *Exciton binding energies and luminescence of phosphorene under pressure*. *Phys. Rev. B* **91**, 115437 (2015).
4. **L. Seixas**, J. E. Padilha, A. Fazio, *Quantum spin Hall effect on germanene nanoroad embedded in completely hydrogenated germanene*. *Phys. Rev. B* **89**, 195403 (2014).
3. J. E. Padilha, **L. Seixas**, R. B. Pontes, A. J. R. da Silva, A. Fazio, *Quantum spin Hall effect in a disordered hexagonal Si<sub>x</sub>Ge<sub>1-x</sub> alloy*. *Phys. Rev. B* **88**, 201106(R) (2013).
2. L. B. Abdalla, **L. Seixas**, T. M. Schmidt, R. H. Miwa, A. Fazio, *Topological insulator Bi<sub>2</sub>Se<sub>3</sub>(111) surface doped with transition metals: An ab initio investigation*. *Phys. Rev. B* **88**, 045312 (2013).

1. L. Seixas, L. B. Abdalla, T. M. Schmidt, A. Fazzio, R. H. Miwa, *Topological states ruled by stacking faults in  $\text{Bi}_2\text{Se}_3$  and  $\text{Bi}_2\text{Te}_3$* . *J. Appl. Phys.* **113**, 023705 (2013).

## Invited talks

- “*Phase transitions and covalent functionalization in two-dimensional metal dichalcogenides*”,  
Condensed Matter Physics in the Metropolis (ICTP event),  
São Paulo, SP, Brazil (2018);
- “*Designing 2D Materials for Hydrogen Production Technologies*”,  
Brazilian Physical Society Autumn Meeting (EOSBF),  
Foz do Iguaçu, PR, Brazil (2018);
- “*Defects in 2D materials and their applications in energy*”,  
III Computational Chemistry School,  
Ribeirão Preto, SP, Brazil (2017);
- “*Multiferroic order and phase transitions in two-dimensional materials*”,  
Brazilian MRS Meeting,  
Campinas, SP, Brazil (2016);
- “*O Mundo dos Materiais 2D*”,  
UFF Academic Week,  
Volta Redonda, RJ, Brazil (2016).