

Prof. Jordan Del Nero
Departamento de Física
Universidade Federal do Pará
66.075-110 Belém PA BRAZIL
<http://www.ufpa.br/jordan/>

Current position

Since 2004: Head of independent research group devoted to several aspects of molecular electronics at Universidade Federal do Pará: Currently 12 students (9 PhD, 3 MSc).

Professional experience

- 2004** – Associate Professor as Permanent Position at Physics Department, UFPA.
- 2013 – 2017 Affiliated Member of Brazilian Academy of Science
- 2016 – 2017 Visiting Scholar at Physics Department / University of Florida.
- 2010 – 2011 Visiting Scholar at Département de Physique, Ecole Normale Supérieure - Paris.
- 2010 – 2010 Visiting Researcher at Brazilian Institute of Standards and Technology (Laboratory of Theoretical Nanometrology).
- 2008 – 2010 Visiting Scholar at Universidade Federal do Rio de Janeiro.
- 2004** – Associate Professor as Permanent Position at Physics Department,
Universidade Federal do Pará.
- 2002 – 2004 Visiting Professor at Universidade Federal do Pará.

Education

- 2000 –2002 Post-Doc Position at Universidade Federal de Pernambuco
University of California (Santa Barbara)
- 1993- 1999 M.Sc. & D.Sc.; Applied Physics, Universidade Estadual de Campinas
- 1990- 1993 L.Sc. Physics, Universidade Federal de Santa Maria

International Activities/Collaborations

- 2007 Visit at: University of Rome (Italy) in collaboration with Prof. Alfredo di Nola (Molecular Dynamics of Molecules). Support: CNPq
- 2005, 2006, 2008, 2010
Collaboration: Max Planck Institute (Germany), Prof. Geerd Diercksen (Electronic Structure of Confined Molecules). Support: CAPES
- 2008 Collaboration: Ludwig-Maximilians-Universität (Germany), Prof. Werner Ertel-Ingrisch and Prof. Robert Stark (New routes for Carbon Nanotubes). Support: CAPES/DAAD.
- 2009, 2010 Collaboration: University of Porto (Portugal), Prof. Manuel Vieira (Nanocomposites Aluminum/Nanotube). Support: Erasmus Mundus
- 2010, 2011 Collaboration: Département de Physique - Ecole Normale Supérieure (France), Prof. Gérald Bastard (Organic Quantum Dots). Support: ELNorte

2012 Collaboration: UNESCO - International Centre for Theoretical Physics, Trieste (Italy), (Molecular Electronics). Support: ICTP/ELN
2016, 2017 Collaboration: Physics Department / University of Florida. Prof. Hai-Ping Cheng (Molecular Electronics). Support: CNPq

Academic service

Reviewer (Selected journals)

Journal of Physical Chemistry, A, B, C; Materials Research; Journal of Solid State Chemistry; Chemical Physics Letters; Int. J. Quant. Chemistry; Materials Research; Computers & Electrical Engineering; J. of Nanoscience and Nanotechnology; Molecular Simulation; J. Nanopart. Research; Chemical Physics...

Associated Editor

Chemical Sensors(2012-2015); International Scholarly Research Network – Nanomaterials (2012-2015).
Science Advances Today (2016-)

Committees

2003 - Member of Physics Graduate Program (UFPA)
2004 - Member of Electrical Engineering Graduate Program (UFPA)
2008 - 2009 Member of Research Chamber: Institute of Natural & Exact Science (UFPA)

Organization of Conferences

2003 XXIII North - Northeastern Conference of Physicists (Ceará State)
2005,2006,2007 Conference of Physics Graduate Program (UFPA) (Pará State)
2007 Brazilian Symposium of Theoretical Chemistry (São Paulo State)
2009 XXVII North - Northeastern Conference of Physicists (Pará State)
2009 Physics National Meeting of Condensed Matter (Pará Chapter)
2010 Physics National Meeting of Condensed Matter (Pará Chapter)
2011 I Amazonian Workshop on Nanotechnology
2012 2nd International Amazonian Workshop on Nanotechnology. Sustainable Innovation.
2015 17th Brazilian Workshop on Semiconductor Physics
2016 1st Amazonian Lectures on Molecular Electronics

Teaching experience

Lectures, seminars, and practical courses

Solid State Physics (for physics, graduate program)
Fundamental Aspects of Nanotechnology (for electrical engineering, graduate program)
Atomic and Molecular Physics (for physics, graduate program)
Molecular Electronics (for physics and electrical engineering, graduate program)
Laboratory of Physics (for undergraduate students)
Computational Physics (for undergraduate students)
Fundamental Physics (for undergraduate students)

Research projects / grants

(2009 -) Research Fellow II of the Brazilian National Research Council (CNPq).
(2013 -) Affiliated member of Brazilian Academy of Science.

(2011 - 2015) NANOMATERIALS DEVELOPMENT FOR COATING HYDRAULIC TURBINE [ELETRONORTE];(2011 - 2015) Network deployment academic cooperation UFPA/UFMG/UFC/CBPF [MCT/CNPq/MEC/CAPES]; (2011 - 2014) NANOMAT @ VALE Company [FAPESPA];(2010 - 2013) Physical characterisation of vegetal oil [FAPESPA]; (2010 - 2010) Nanometrology Applied for Molecular Electronics [FAPERJ]; (2009 - 2013) Electronic Transport Modeling in Molecular Devices [FAPESPA]; (2009 - 2010) Erasmus Mundus External Cooperation Window [CEO]; (2009 - 2013) Caracterization and Manipulation of Nanoelectronic Devices [FAPESPA]; (2009 - 2012) Science & Technology National Institute/Carbon Nanomaterials [CNPq]; (2009 - 2011) Design of polymeric and pH indicator Nano-Devices under doping and electric external field by Hartree-Fock derivative methodologies [FAPESPA]; (2009 - 2010) Erasmus Mundus External Cooperation Window [The European Commission - Education, Audiovisual and Culture Executive Agency]; (2008 - 2010) Carbon Nanotubes: Synthesis optimization and morphological characterization [FAPESPA]; (2008 - 2010) Synthesis, thermal and nano-structural characterization of LDHs of the system (Mg/Al,Ce,La-CO₃) doped with Carbon Nanotubes [CAPES/DAAD]; (2006 - 2009) National network on Carbon Nanotube [CNPq]; (2006 - 2008) Transport properties in nanomaterials under external electric field [UFPA (Internal Grant)]; (2005 - 2007) Investigation of thermal and optical properties of polymers doped with organic structures [CNPq]; (2004 - 2008) Theoretical Analysis and Computational development for electronic and optical devices in micro and nanoscale [Cooperative project Electrical Engineering & Physics Departament] ; (2004 - 2006) Development of Research in Condensed Matter and Field Quantum Theory [CNPq]; (2004 - 2005) Spectroscopy applied for determination of native fruits of Pará State [FUNTEC (State Foundation)]; (2004 - 2005) Electronic Structure investigation of antidepressant molecules [UFPA]; (2004 - 2005) Molecular Physics applied for high schools [PROINT(grants from Chamber of University (Educational section))]; (2003 - 2006) Monte Carlo / Quantum Mechanics simulation for liquid structures [IFUSP/FAPESP]; (2003 - 2004) Excited states of dendrimers [UFPA]; (2003 - 2004) Design of gases derivative of inorganic oil [PROINT]; (2000 - 2002) Extraction of Calcium for fabrication of optoelectronic devices [CTPETRO].

Theses supervised (Former Students) (9 D.Sc.; 20 M.Sc.;14 Undergraduate)

@ www.ufpa.br/jordan/mygroupjdn.htm

Public outreach

- Beira-Rio Newspaper, UFPA, (Pesquisa gera Pedido de Patente), p.9, november. 2011.
- Beira-Rio Newspaper, UFPA, The invisible world of Nanotechnology (O mundo invisível da nanotecnologia), v.80, VI, febr. 2010.
- Beira-Rio Newspaper, UFPA, Physical Characteristics of Amazonian Oil (Características físicas dos óleos da Amazônia são pesquisadas na UFPA), v. 22, p. 3 - 4, 01 jun. 2004.
- TV Interview: Physical Properties of Amazonian Vegetal Oil. 2004.
- TV Interview: Aggregating values for Vegetal Oil. 2004.

Full list of patents (6), and papers (80).

It is possible reach at www.ufpa.br/jordan the full papers in .pdf format.

- Papers (Accepted/Published) -

80. OLIVEIRA, A.S.; BEIRAO, A.T.M.; DA SILVA, S.J.S.; DEL NERO, J.; Electronic Signature of single-molecular device based on polyacetylene derivative. *Journal of Computational Electronics*. Springer. v. XX, p. YYY-ZZZ, 2018.
79. PEREIRA, L.F.; DAMASCENO, L.E.F.; DEL NERO, J.; SILVA, S.J.S.; COSTA, M.B.C.; ALEIXO, V.F.P.; SILVA JR., C.A.B.; An Astronomy Teaching Experience in the 6th Year of Fundamental Education, Experiences in Science Teaching (EXPERIÊNCIAS EM ENSINO DE CIÊNCIAS (UFRGS)), v. 12, p. 19-35, 2017.
78. CORREA, S.M.; FERREIRA, D.F.S.; SIQUEIRA, M.R.S.; REIS-SILVA, J.C.; LEAL, J.F.P.; SILVA JR., C.A.B.; DEL NERO, J.; Investigation of electronic transport under mechanical strain in a molecular junction composed of a polyynes bridge connected to SWCNT electrodes, *PCCP, Physical Chemistry Chemical Physics*, v. 19, p. 22078-22087, 2017.
77. REIS-SILVA, J.C.; FERREIRA, D.F.S.; LEAL, J.F.P.; DEL NERO, J.; Enhancing and optimizing electronic transport in biphenyl derivative single-molecule junctions attached to carbon nanotubes electrodes, *Solid State Communications*, v. 252, p. 46-50, 2017.
76. ALEIXO, V.F.P.; SILVA JR., C.A.B.; DEL NERO, J.; Electronic Transport in Cyclic Carotenoids Based p Conjugation System, *Science Advances Today*, v. 2, p. 25258, 2016.
75. VASCONCELOS, RAILSON C. ; ALEIXO, VICENTE F.P. ; Del Nero, Jordan . Organic Field Effect Transistor Composed by Fullerene C60 and Heterojunctions. *Physica. E, Low-Dimensional Systems and Nanostructures (Print)*, v. 86, p. 142-145, 2017.
74. VINGRE, G. ; CHAVES NETO, A. M. J. ; SILVA JÚNIOR, C. A. B. ; Del Nero, Jordan . Experimental and Theoretical Studies of the NEXAFS Spectra and Dominant Nanoelectronic Transport Process in Organic Molecules. *Journal of Nanoscience and Nanotechnology (Print)*, American Scientific Publishers, 2017.
73. PEREIRA, D. P. ; DEL NERO, J. ; DIONIZIO MOREIRA, M. ; OLIVEIRA, P.C. ; ALCÂNTARA JÚNIOR, P. A. ; REMEDIOS, C.M.R. ; MOREIRA, S. G. C. . Theoretical and Experimental features of nano-Crystals Rochelle salt: Piezoelectric Resonance and Phase Transition. *Journal of Nanoscience and Nanotechnology (Print)*, American Scientific Publishers, v. 17, p. 4180-4184, 2017.
72. SILVA JR., C.A.B.; PINHEIRO, F.A.; DEL NERO, J.; Organic Nano-Devices Composed by Carbon NanoTube/Oligophenylenes/Carbon NanoTube Junctions: Transition-Voltage Spectroscopy, Applications and Chirality versus Geometry *Journal of Nanoscience and Nanotechnology*. American Scientific Publishers. v. 16, p. 9771-9778, 2016.
71. OLIVEIRA, A.W.; CORREA, S.M.; RODRIGUES-NETO, J.A.; CAVALCANTE, G.P.S.; ALEIXO, V.F.P.; DEL NERO, J.; Characterization of a Multiple Molecular pi-line Field Effect Transistor. *Journal of Nanoscience and Nanotechnology*. American Scientific Publishers. v. 16, p. 7594-7598, 2016.
70. SOUSA, M.E.S.; REIS, M.A.L.; DEL NERO, J.; Oxidation States with heating on Charge Transport of the Graphene Nanoribbon. *Journal of Nanoscience and Nanotechnology*. American Scientific Publishers. v. 16, p. 321-326, 2016.
69. OLIVEIRA, A.W.; CORREA, S.M.; RODRIGUES-NETO, J.A.; CAVALCANTE, G.P.S.; ALEIXO, V.F.P.; DEL NERO, J.; Characterization of a Multiple Molecular pi-line Field Effect

Transistor. *Journal of Nanoscience and Nanotechnology*. American Scientific Publishers. v. xx, p. yyy-zzz, 2016.

68. SOUSA, M.E.S.; REIS, M.A.L.; DEL NERO, J.; Oxidation States with heating on Charge Transport of the Graphene Nanoribbon. *Journal of Nanoscience and Nanotechnology*. American Scientific Publishers. v. 16, p. 321-326, 2016.

67. SILVA JR., C.A.B.; LEAL, J.F.P.; ALEIXO, V.F.P.; PINHEIRO, F.A.; DEL NERO, J.; Electronic transport, transition-voltage spectroscopy, and the Fano effect in single molecule junctions composed of a biphenyl molecule attached to metallic and semiconducting carbon nanotube electrodes. *PCCP. Physical Chemistry Chemical Physics*, v. 16, p. 19602-19607, 2014.

66. TAVARES, S.C.C.; CONDE-DE-SOUSA, G.T.; SOUSA, M.E.S.; ALEIXO, V.F.P.; DEL NERO, J.; Electrical Signature of Graphene and Dendrimer Nanoantennas. *Journal of Computational and Theoretical Nanoscience*. American Scientific Publishers. v. 11, p. 1899-1902, 2014.

65. SAMPAIO-SILVA, A.; ALEIXO, V.F.P.; CORREA, S.M.; DEL NERO, J.; Investigation of electronic transport in Organic Electroluminescent Device composed by AlQ₃ molecules. *Journal of Computational and Theoretical Nanoscience*. American Scientific Publishers. v. 11, p. 1164-1168, 2014.

64. REIS, M.A.L.; ROMAN, L.S.; DEL NERO, J.; Photosensitizing effect of methyl red dye in a doped organic photodetector, *Chemical Sensors*. v. 3, p. 19602-19607, 2013.

63. ALEIXO, V.F.P.; SILVA JR., C.A.B.; DEL NERO, J.; Molecular electronic junction composed by C₆₀ as spacer and four terminals formed by acceptors group: Transition-voltage spectroscopy. *Journal of Computational and Theoretical Nanoscience*. American Scientific Publishers. v. 11, p. 637-641, 2014.

62. SARAIVA-SOUZA, A.; SOUZA, F.M.; BALDISSERA, G.; SILVA, W.E.; ROMAN, L.S.; MENDES FILHO, J.; DEL NERO, J.; FAZZIO, A.; SOUZA FILHO, A.G.; Light emission and current rectification in a molecular device: Experiment and theory, *Journal of Applied Physics*, American Institute of Physics. v. 112, p. 113108 (1-6), 2012.

61. RODRIGUES, E.; PEREIRA, P.; MARTINS, T.; VARGAS, F.; SCHELLER, T.; CORREA, J.; DEL NERO, J.; MOREIRA, S.G.C.; ERTEL-INGRISCH, W.; DE CAMPOS, C.P.; GIGLER, A.; Novel rare earth (Ce and La) hydroxide like material: Synthesis and characterization, *Materials Letters*. Elsevier. v. 78, p.195-198, 2012.

60. REIS, M.A.L.; SARAIVA, A. F.; VIEIRA, M.F.G.; DEL NERO, J., Study of Ink Paper Sensor Based on Aluminum/Carbon Nanotubes Agglomerated Nanocomposites, *Journal of Nanoscience and Nanotechnology*. American Scientific Publishers. v. 12, p.6955-6960, 2012.

59. SHELTON, W.A.; APRA, E.; SUMPTER, B.G.; SARAIVA-SOUZA, A.; SOUZA FILHO, A.G.; DEL NERO, J., MEUNIER, V.; A new class of organic molecular magnets, *Chemical Physics Letters*. American Chemical Society. v. 511, p. 294-298, 2011.

58. SILVA JR, C.A.B.; DA SILVA, S.J.S.; LEAL, J.F.P.; PINHEIRO, F. A.; DEL NERO, J.; Electronic transport in oligo-para-phenylene junctions attached to carbon nanotube electrodes: Transition Voltage Spectroscopy and Chirality, *Physical Review B – Condensed Matter and Materials Physics*. American Physical Society. v. 83, p. 245444(1-6), 2011.

57. SILVA, R., DE LIMA, E.; ANDRADE-FILHO, T.; MARTINS, H.S.; OLIVEIRA, P.C.; DEL NERO, J.; ALCANTARA JR, P.; REMEDIOS, C.M.R.; MOREIRA, S.G.C., Experimental and Theoretical Optical properties of β -carotene in oleic acid solution, *Journal of BioNanoscience*. v. 4, p. 104-108, 2011.
56. DA SILVA, S.J.S.; DEL NERO, J. Conjugated dendrimers: Characterization of a new class of organic materials, *Journal of Computational and Theoretical Nanoscience*. American Scientific Publishers. v. 8, p. 2209-2213, 2011.
55. DA SILVA, S.J.S.; DEL NERO, J. Theoretical modelling of new low band-gap polymers for applications in molecular electronics, *Advanced Science Letters*. v. 4, p. 3602-3604, 2011.
54. LEAL, J.F.P.; AZEVEDO, D.L.; DEL NERO, J.; Molecular Dynamics of Carbon Nanotube Bundles as Molecular Sieves, *Journal of Nanoscience and Nanotechnology*. American Scientific Publishers. v. 11, p. 4934-4937, 2011.
53. LEAL, J.F.P.; DA SILVA, S.J.S.; GRANHEN, E.R.; SILVA JR., C.A.B.; MOREIRA, M.D.; ACHETE, C.A.; CAPAZ, R.B.; DEL NERO, J.; Properties of Charged Defects on Unidimensional Polymers, *Journal of Computational and Theoretical Nanoscience*. American Scientific Publishers. , v. 8, p. 541-549, 2011.
52. REIS, M.A.L.; RIBEIRO, T.C.S.; CAVA, C.E.; ROMAN, L.S.; DEL NERO, J.; Theoretical and Experimental Investigation of environment dependence and electric properties for volatile memory based on Methyl-red dye thin-film, *Solid-State Electronics*, Elsevier, v. 54, p. 1697-1700, 2010.
51. RATIVA, D.; DA SILVA, S.J.S.; DEL NERO, J.; GOMES, A.S.L.; ARAUJO, R.E.; Nonlinear optical properties of aromatic amino acids in femtosecond regime, *Journal of the Optical Society of America B*, The Optical Society, v. 27, p. 2665-2668, 2010.
50. GRANHEN, E.R.; LIMA, D.B.; SOUZA, F.M.; SERIDONIO, A.C.; DEL NERO, J.; Molecular Electronic Device Based on pH Indicator by Equilibrium / Non-Equilibrium Methodology, *Solid-State Electronics*, Elsevier. v. 54, p. 1613-1616 2010.
49. SILVA JR, C.A.B.; DA SILVA, S.J.S., GRANHEN, E.R.; LEAL, J.F.P.; DEL NERO, J.; PINHEIRO, F.A.; Electronic transport in all-organic biphenyl single-molecule junctions with carbon nanotubes electrodes: the role of molecular conformation and chirality, *Physical Review B – Condensed Matter and Materials Physics*, American Physical Society. v. 82, p. 085402 (1-5), 2010.
48. PINHEIRO, F.A.; DA SILVA, S.J.S., GRANHEN, E.R.; DEL NERO, J.; Probing Molecular Chirality via Electronic Transport, *Physical Review B – Condensed Matter and Materials Physics*, American Physical Society. v. 81, p. 115456 (1-5), 2010.
47. MENEZES, M.; DEL NERO, J.; CAPAZ, R.B.; REGO, L.G.C.; Comment on “Wave-scattering formalism for thermal conductance in thin wires with surface disorder”, *Physical Review B – Condensed Matter and Materials Physics*, American Physical Society. v. 81, p. 117401 (1-2), 2010.

46. REIS, M.A.L.; THOMAZI, F.; DEL NERO, J.; ROMAN, L.S.; Development of a Chemiresistor Sensor Based on Polymers-dye Blend for Detection of Ethanol Vapor, *Sensors (Basel)*. MDPI Publishing. v. 10, p. 2812-2820, 2010.
45. GRANHEN, E.R.; REIS, M.A.L.; SOUZA, F.M.; DEL NERO, J.; Transport Model of Controlled Molecular Rectifier Showing Unusual Negative Differential Resistance Effect, *Journal of Nanoscience and Nanotechnology*. American Scientific Publishers. v. 10, p. 8112-8117, 2010.
44. MENEZES, M.; SARAIVA-SOUZA, A.; DEL NERO, J.; CAPAZ, R.B.; Proposal for a Single-Molecule Field-Effect Transistor for Phonons, *Physical Review B – Condensed Matter and Materials Physics*, American Physical Society. v. 81, p. 012302 (1-4), 2010.
43. SOUZA, F.M.; DEL NERO, J.; EGUES, J.C., Shot Noise in Spin-diode Geometry, *Journal of Superconductivity and Novel Magnetism*, Elsevier. v. 23, p. 45-48, 2010.
42. DEL NERO, J.; SOUZA, F.M.; CAPAZ, R.B.; Invited Review, Molecular Electronics Devices: Short Review, *Journal of Computational and Theoretical Nanoscience*. American Scientific Publishers. v. 7, p. 503-516, 2010.
41. DE SOUZA, F.F.; MOREIRA, S.G.C.; DA SILVA, S.J.S., DEL NERO, J.; ALCANTARA JR, P., Dielectric Properties of Oleic Acid in Liquid Phase, *Journal of BioNanoscience*. American Scientific Publishers. v. 3, p. 139-142, 2009.
40. ANDRADE FILHO, T.S., RIBEIRO, T.C.S.; DEL NERO, J.; Cover Issue Image / The UV-vis absorption spectrum of the flavonol quercetin in methanolic solution - a theoretical investigation, *European Physical Journal E – Soft Matter and Biological Physics*, Springer-Verlag, v. 29, p. 253-259, 2009.
39. SERIDONIO, A.C.; SOUZA, F.M.; DEL NERO, J.; SHELYKH, I.A.; Fano-Kondo Spin Filter, *Physica E: Low-dimensional Systems and Nanostructures*. Elsevier. v. 41, p. 1611-1615, 2009.
38. DA SILVA, S.J.S., DEL NERO, J., Cover Issue Image / Design of Highly Integrated Organic Nanodevice, *Journal of Computational and Theoretical Nanoscience*. American Scientific Publishers. v. 6, p. 490-493, 2009.
37. REIS, M.A.; SARAIVA-SOUZA, A.; DEL NERO, J., Capacitive Effects in a Three-Terminal Organic Nano-Device, *Journal of Computational and Theoretical Nanoscience*. American Scientific Publishers. v. 6, p. 101-105, 2009.
36. SARAIVA-SOUZA, A.; SOUZA, F.M.; ALEIXO, V.F.; GIRAO, E.C.; MENDES FILHO, J.; MEUNIER, V.; SUMPTER, B.G.; SOUZA FILHO, A.G.; DEL NERO, J., Single Molecule Rectifier with Strong Push-Pull Coupling The *Journal of Chemical Physics*, American Institute of Physics, v. 129, p. 204701(1-6), 2008.
35. PEREIRA, D.P.; DE OLIVEIRA, P.C.; DEL NERO, J.; ALCANTARA JR, P.; REMEDIOS, C.M.R.; MOREIRA, S.G.C.; New Approach for Piezoelectric Resonances and Phase Transitions in KDP and ADP crystals, *Journal of Physics: Condensed Matter*. Institute of Physics, v. 20, p. 465217(1-5), 2008.

34. SARAIVA-SOUZA, A.; GESTER, R.M.; REIS, M.A.; SOUZA, F.M.; DEL NERO, J. Design of a Molecular π -Bridge Field Effect Transistor (MBFET) Journal of Computational and Theoretical Nanoscience. American Scientific Publishers. v. 5, p. 2243-2246, 2008.
33. SARAIVA-SOUZA, A.; SOUZA FILHO, A.G.; SUMPTER, B.G.; MEUNIER, V.; DEL NERO, J., Quantum Length Dependence of the Electrical Rectification in Betaine Derivatives, Journal of Physical Chemistry C American Chemical Society, v. 112, p. 12008-12011, 2008.
32. ANDRADE FILHO, T.S., MARTINS, H.S.; DEL NERO, J. Theoretical investigation of the electronic absorption spectrum of Piceatannol in methanolic solution Theoretical Chemistry Accounts. Elsevier. v. 121, p. 147-153, 2008.
31. LIMA, D.B.; DEL NERO, J., Fundamental Rules to Construct Highly Integrated Organic Nanowires as Nanodevices Journal of Computational and Theoretical Nanoscience. American Scientific Publishers. v. 5, p. 1445-1449, 2008.
30. REIS, M.A.; DEL NERO, J..Design of a Three-Terminal NanoDevice: Controlled Molecular Rectifier, Journal of Computational and Theoretical Nanoscience. American Scientific Publishers. v. 5, pp. 567-570, 2008.
29. SANTOS COSTA, S.C.; GESTER, R.M.; GUIMARÃES, J.R.; AMAZONAS, J.G.; DEL NERO, J.; SILVA, S. B. C.; GALEMBECK, A. The Entrapment of Organic Dyes into sol-gel Matrix: Experimental Results and Modeling for Photonic Applications Optical Materials. Elsevier. v. 30, p.1432-1439, 2008.
28. LIMA, D.B.; REIS, M.A.; SOUZA, F.M.; DEL NERO, J. A General Rule for Nanoelectronic Push-Pull Devices Based on Source – σ Bridge – Drain, Journal of Computational and Theoretical Nanoscience. American Scientific Publishers. v. 5, pp. 563-566, 2008.
27. GUIMARÃES, J.R.; AMAZONAS, J.G.; SILVA JR, C.A. B.; DE MELO, C.P.; LAKS, B.; DEL NERO, J. On the Fluorescence of Pyrrole Derivative Oligomer Materials Science and Engineering C, Elsevier. v. 28, p. 1076-1081, 2008.
26. SARAIVA-SOUZA, A.; SOUZA, F.M.; DEL NERO, J. Invited Paper, Insights of Nano Organic Field Effect Transistor Scientific Journal of UFPA (Revista Científica da UFPA), v. 6(1) (2007) 7.
25. CHAVES NETO, A. M. J.; DEL NERO, J. Toroidal Carbon Nanotube as Molecular Motor Journal of Computational and Theoretical Nanoscience, American Scientific Publishers. v. 4, p. 107-110, 2007.
24. DEL NERO, J.; CHAVES NETO, A. M. J. Carbon Nanotubes as Gun and Molecular Motor. Journal of Computational and Theoretical Nanoscience, American Scientific Publishers. v. 4, p. 606-610, 2007.
23. SARAIVA-SOUZA, A.; DE MELO, C.P.; PEIXOTO, P.; DEL NERO, J..A New Class of Push-Pull Molecules for Molecular Electronics Optical Materials, Elsevier. v. 29, p. 1010-1013, 2007.
22. SAMPAIO-SILVA, A.; SANTOS COSTA, S.C.; DEL NERO, J. Invited Paper, The Excited State Properties of Crystal Violet Molecules. Scientific Journal of UFPA (Revista Científica da UFPA), v. VI, 13.11.2006 p. 1-5, 2006.

21. AMAZONAS, J.G.; GUIMARÃES, J.R.; SANTOS COSTA, S.C.; LAKS, B.; DEL NERO, J. Theoretical Modelling of Low Band-Gap Organic Oligomers. *Journal of Molecular Structure Theochem*, Elsevier. v. 759, p.87-91, 2006.
20. DEL NERO, J.; ARAUJO, R. E.; GOMES, A. S. L.; DE MELO, C. P. Theoretical and Experimental Investigation of the Hyperpolarizabilities of Methyl Orange *The Journal of Chemical Physics*, American Institute of Physics, v. 122, n. 104506, p. 1-6, 2005.
19. GALEMBECK, A.; SILVA, S. B. C.; SILVA, J. A. P.; DEL NERO, J. Polyphosphate gel/methyl orange supramolecular composites. *Optical Materials*, Elsevier. v. 24, p. 637-641, 2004.
18. DEL NERO, J.; GALEMBECK, A.; SILVA, S. B. C.; SILVA, J. A. P. Dye Incorporation in Polyphosphate Gels: Synthesis and Theoretical Calculations. *Materials Research*, v. 6, n. 3, p. 341-346, 2003.
17. DEL NERO, J.; GALVAO, D. S.; LAKS, B. Electronic Structure Investigation of Biosensor Polymer. *Optical Materials*, Elsevier. v. 21, p. 461-466, 2003.
16. DEL NERO, J.; DE MELO, C. P. Investigation of the Excited States of Resveratrol and Related Molecules. *International Journal of Quantum Chemistry*, Wiley. v. 95, n. 3, p. 213-218, 2003.
15. DEL NERO, J.; SILVA, J. A. P.; SILVA, S. B. C.; GALEMBECK, A. Malachite Green/Polyphosphate Gel Hybrid Materials: Synthesis and Optical Properties. *Synthetic Metals*, Elsevier. v. 135, p. 157-158, 2003.
14. ROSSETO, R.; TORRES, J. C.; DEL NERO, J. Modeling of Alkynes: Synthesis and Theoretical Properties. *Materials Research*, v. 6, n. 3, p. 335-340, 2003.
13. DEL NERO, J.; DE MELO, C. P. Quantum Chemistry Calculation of Resveratrol and Related Stilbenes. *Optical Materials*, Elsevier. v. 21, n. 1-3, p. 455-460, 2003.
12. ROSSETO, R.; VARGAS, M. D.; DEL NERO, J. Theoretical Modeling of Alkynes. *International Journal of Quantum Chemistry*, Wiley. v. 95, n. 2, p. 137-143, 2003.
11. DEL NERO, J.; DE MELO, C. P. Semiempirical/CI of the Excited States Characterization of Retinal Molecules. *Molecular Crystals and Liquid Crystals Science and Technology Section*, Taylor & Francis. v.374, n. 1-3, p. 555-560, 2002.
10. DEL NERO, J.; LAKS, B. Electronic structure and optical spectroscopy of conducting electrochromic devices. *Journal Of Molecular Modeling*, Springer. v. 7, p. 354-359, 2001.
9. DEL NERO, J.; DE MELO, C. P. Semiempirical and ab initio investigation of defects in PPV oligomers. *Synthetic Metals*, Elsevier. v. 121, p. 1741-1742, 2001.
8. DEL NERO, J.; LAKS, B. Electronic structure of dithienopyrrole, dithienothiophene and thionaphtheneindole. *Synthetic Metals*, Elsevier. v. 101, n. 1-3, p. 379-380, 1999.
7. DEL NERO, J.; DORETTO, R.; LAKS, B. Optical spectroscopy of heterocycles based on pyrrole, furan and thiophene. *Synthetic Metals*, Elsevier. v. 101, n. 1-3, p. 178-179, 1999.

6. DEL NERO, J.; LAKS, B. Spectroscopy study of polyazopyrroles (a narrow band gap system) . Synthetic Metals, Elsevier .v. 101, n. 1-3, p. 440-441, 1999.
5. ARAUJO, A.; DEL NERO, J.; LAKS, B. Study of copolymer composed by polyacetylene and polyazine. Synthetic Metals, Elsevier. v. 101, n. 1-3, p. 365-366, 1999.
4. DEL NERO, J.; LAKS, B. A comparative study of ordered and disordered distribution of defects in polyazine derivatives. Synthetic Metals, Elsevier. v. 84, n. 1, p. 1127-1128, 1997.
3. DEL NERO, J.; LAKS, B. Effect of bipolaron type of defect on the polyacetylene – polycarbonitrile copolymer. Synthetic Metals, Elsevier. v. 84, n. 1-3, p. 869-870, 1997.
2. DEL NERO, J.; LAKS, B. Electronic structure of polycarbonitrile: The role of polaron-type defects . Journal of Molecular Structure, Elsevier. v. 394, n. 2, p. 209-214, 1997.
1. DEL NERO, J.; CUSTÓDIO, R.; LAKS, B. Polycarbonitrile: A semiempirical, ab-initio and density functional study of molecular stability. Synthetic Metals, Elsevier. v. 84, n. 1-3, p. 423-424, 1997.

- Patents -

6. REIS, M.A.; VIEIRA, M.F.G.; DEL NERO, J. Thermal-piezoresistive sensor based on carbon nanotubes/ Aluminum (CNT/Al) agglomerated nanocomposites. PROCESSO DE SÍNTESE DO NANOCOMPÓSITO DE ALUMÍNIO E NANOTUBOS DE CARBONO, NANOCOMPÓSITOS ASSIM OBTIDOS E SEU USO COMO SENSOR TERMO-PIEZORESISTIVO © ® Brazilian Patent (PI 1002753-0).
<http://www.youtube.com/watch?v=FttrnXSiBH8>
5. REIS, M.A.; THOMAZI, F.; ROMAN, L.S.; DEL NERO, J. ELEMENTO SENSOR ORGÂNICO NANO E MICRO-ESTRUTURADO PARA DETECÇÃO DE VAPOR COMBUSTÍVEL © ® [in portuguese] Brazilian Patent (PI 0817953-0). 2010. Patente: Privilégio e Inovação. 03/14/2008 (Depósito); 07/20/2010 (Concessão).
4. REIS, M.A. ; SARAIVA-SOUZA, A. ; DEL NERO, J. Controlled Molecular Rectifier. © ® (Retificador Molecular Controlado [in portuguese]) Brazilian Patent (PI 0605719-5). 2007. Patente: Privilégio e Inovação. 20 de Junho de 2006 (Depósito); 30 de Agosto de 2007 (Concessão).
- 3 REIS, M.A. ; DEL NERO, J. Process to obtain CNT by short-circuit © ® (Reator e Processo para Obtenção de Materiais Carbonosos por Corrente Elétrica de Curto-Circuito [in portuguese]) Brazilian Patent (PI0605767-5). 2007. Patente: Privilégio e Inovação. 21 de Dezembro de 2006 (Depósito); 12 de Junho de 2007 (Concessão). International Patent. 2009. (WO/2008/074114) REACTOR AND METHOD FOR OBTAINING CARBON MATERIAL BY SHORT CIRCUIT ELECTRIC CURRENT © ®
- 2 COSTA, S.C.S ; REIS, M.A. ; ROMAN, L. S. ; DEL NERO, J. Organic Nanostructured Photodiode © ® (Fotodiodo Orgânico Nanoestruturado [in portuguese]) Brazilian Patent (PI0603868-9). 2006. Patente: Privilégio e Inovação.
- 1 DEL NERO, J.; SARAIVA-SOUZA, A.; dos REIS, M. A.; Molecular pi-Bridge Field Effect Transistor © ® (Transistor de Efeito Campo de Ponte Molecular [in portuguese]) Brazilian

Patent (PI 0503965-7). 2005. Patente: Privilégio e Inovação. n. PI 0503965-7, "Transistor de Efeito Campo de Ponte". 18 de ago. de 2005 (Depósito); 21 de out. de 2005 (Exame).

© Copyrighted; ® Trademark products.