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Qualifications

Microelectronics and Optoelectronics, Doctorate, Universidade NOVA de Lisboa
1 Jan 2002 → 31 Dec 2007
Award Date: 29 Sept 2008
Materials Engineering, Master, Faculdade de Ciências e Tecnologia (FCT)
9 Dec 1996 → 31 Jul 2001
Award Date: 31 Oct 2001

Employment

Associate Professor

DCM - Departamento de Ciência dos Materiais
Universidade NOVA de Lisboa
Portugal
3 Dec 2015 → present

Researcher

CENIMAT-i3N - Centro de Investigação de Materiais (Lab. Associado I3N)
Universidade NOVA de Lisboa
Caparica, Portugal
1 Jan 2022 → present

Assistant Professor

DCM - Departamento de Ciência dos Materiais
Universidade NOVA de Lisboa
Portugal
2 Dec 2012 → 2 Dec 2015

Researcher

CENIMAT-i3N - Centro de Investigação de Materiais (Lab. Associado I3N)
Universidade NOVA de Lisboa
Caparica, Portugal
1 Jul 2009 → 2 Dec 2012

Researcher

UNINOVA-Instituto de Desenvolvimento de Novas Tecnologias
Universidade NOVA de Lisboa
1 Oct 2006 → 28 Feb 2008

Technical & Scientific Director

AlmaScience
Caparica, Portugal
4 Nov 2020 → present

Researcher

Saint Gobain Recherche

1 Mar 2008 → 30 Jun 2009

Research outputs

Screen-printed, flexible, and eco-friendly thermoelectric touch sensors based on ethyl cellulose and graphite flakes inks

Figueira, J., Bonito, R. M., Carvalho, J. T., Vieira, E. M. F., Gaspar, C., Loureiro, J., Correia, J. H., Fortunato, E., Martins, R. & Pereira, L., 1 Jun 2023, In: Flexible and Printed Electronics. 8, 2, 13 p., 025001.

Sustainable electrochemical energy storage devices using natural bast fibres

Manjakkal, L., Jain, A., Nandy, S., Goswami, S., Tiago Carvalho, J., Pereira, L., See, C. H., Pillai, S. C. & Hogg, R. A., 1 Jun 2023, In: Chemical Engineering Journal. 465, 16 p., 142845.

Alkali-Doped Nanopaper Membranes Applied as a Gate Dielectric in FETs and Logic Gates with an Enhanced Dynamic Response

Gaspar, D., Martins, J., Carvalho, J. T., Grey, P., Simões, R., Fortunato, E., Martins, R. & Pereira, L., 15 Feb 2023, In: ACS Applied Materials and Interfaces. 15, 6, p. 8319-8326 8 p.

UV-cured self-healing gel polymer electrolyte toward safer room temperature lithium metal batteries

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Carbon-Yarn-Based Supercapacitors with In Situ Regenerated Cellulose Hydrogel for Sustainable Wearable Electronics

Carvalho, J. T., Cunha, I., Coelho, J., Fortunato, E., Martins, R. & Pereira, L., 24 Oct 2022, In: ACS Applied Energy Materials. 5, 10, p. 11987-11996 10 p.

Atmosphere-Assisted FLASH Sintering of Nanometric Potassium Sodium Niobate

Serrazina, R., Pereira, L., Vilarinho, P. M. & Senos, A. M., 29 Sept 2022, In: Nanomaterials. 12, 19, 14 p., 3415.

Flash Sintered Potassium Sodium Niobate: High-Performance Piezoelectric Ceramics at Low Thermal Budget Processing

Serrazina, R., Tkach, A., Pereira, L., Senos, A. M. O. R. & Vilarinho, P. M., 23 Sept 2022, In: Materials. 15, 19, 8 p., 6603.

Foldable and Recyclable Iontronic Cellulose Nanopaper for Low-Power Paper Electronics

Cunha, I., Ferreira, S. H., Martins, J., Fortunato, E., Gaspar, D., Martins, R. & Pereira, L., Sept 2022, In: ADVANCED SUSTAINABLE SYSTEMS. 6, 9, 15 p., 2200177.

Induced internal stresses and their relation to FLASH sintering of KNN ceramics

Serrazina, R., Gomes, M., Vilarinho, R., Pereira, L., Dean, J. S., Reaney, I. M., Senos, A. M. O. R., Vilarinho, P. M. & Moreira, J. A., 4 Aug 2022, In: Journal of Materials Chemistry C. 10, 30, p. 10916-10925 10 p.

Smart IoT enabled interactive self-powered security tag designed with functionalized paper

Ferreira, G., Opinião, A., Das, S., Goswami, S., Pereira, L., Nandy, S., Martins, R. & Fortunato, E., May 2022, In: Nano Energy. 95, 107021.

Printed in-plane electrolyte-gated transistor based on zinc oxide

Morais, R., Vieira, D. H., Klem, M. D. S., Gaspar, C. H., Pereira, L., Martins, R. & Alves, N., Mar 2022, In: Semiconductor Science And Technology. 37, 3, 035007.

UV-Assisted Annealing Effect on the Performance of an Electrolyte-Gated Transistor Based on Inkjet Printed ZnO Nanoparticles Blended with Zinc Nitrate

Morais, R. M., Vieira, D. H., Ozório, M. D. S., Pereira, L., Martins, R. & Alves, N., Mar 2022, In: IEEE Transactions On Electron Devices. 69, 3, p. 1538-1544 7 p.

Molybdenum disulfide/polyaniline interlayer for lithium polysulphide trapping in lithium-sulphur batteries

Versaci, D., Canale, I., Goswami, S., Amici, J., Francia, C., Fortunato, E., Martins, R., Pereira, L. & Bodoardo, S., 15 Feb 2022, In: Journal Of Power Sources. 521, p. 1-11 11 p., 230945.

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Figueira, J., Loureiro, J., Vieira, E., Fortunato, E., Martins, R. & Pereira, L., Dec 2021, In: Flexible and Printed Electronics. 6, 4, 045018.

Handwritten and Sustainable Electronic Logic Circuits with Fully Printed Paper Transistors

Cunha, I., Martins, J., Bahubalindrani, P. G., Carvalho, J. T., Rodrigues, J., Rubin, S., Fortunato, E., Martins, R. & Pereira, L., Dec 2021, In: Advanced Materials Technologies. 6, 12, 2100633.

Influence of paper surface characteristics on fully inkjet printed PEDOT:PSS-based electrochemical transistors

Morais, R., Vieira, D. H., Gaspar, C., Pereira, L., Martins, R. & Alves, E. N., Dec 2021, In: Semiconductor Science And Technology. 36, 12, 125005.

Porous PDMS conformable coating for high power output carbon fibers/ZnO nanorod-based triboelectric energy harvesters

Barras, R., dos Santos, A., Calmeiro, T. R., Fortunato, E., Martins, R., Águas, H., Barquinha, P., Igreja, R. & Pereira, L., Dec 2021, In: Nano Energy. 90, Part B, 106582.

Reusable and highly sensitive SERS immunoassay utilizing gold nanostars and a cellulose hydrogel-based platform

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Tuning the Electrical Properties of Cellulose Nanocrystals through Laser-Induced Graphitization for UV Photodetectors

Claro, P. I. C., Marques, A. C., Cunha, I., Martins, R. F. P., Pereira, L. M. N., Marconcini, J. M., Mattoso, L. H. C. & Fortunato, E., 27 Aug 2021, In: ACS APPLIED NANO MATERIALS. 4, 8, p. 8262-8272

Uv-responsive screen-printed porous zno nanostructures on office paper for sustainable and foldable electronics

Ferreira, S. H., Cunha, I., Pinto, J. V., Neto, J. P., Pereira, L., Fortunato, E. & Martins, R., Aug 2021, In: Chemosensors. 9, 8, 192.

Cellulose: A Contribution for the Zero e-Waste Challenge

Nandy, S., Goswami, S., Marques, A., Gaspar, D., Grey, P., Cunha, I., Nunes, D., Pimentel, A., Igreja, R., Barquinha, P., Pereira, L., Fortunato, E. & Martins, R., Jul 2021, In: Advanced Materials Technologies. 6, 7, 2000994.

Ionic Conductive Cellulose Mats by Solution Blow Spinning as Substrate and a Dielectric Interstrate Layer for Flexible Electronics

Claro, P. I. C., Cunha, I., Paschoalin, R. T., Gaspar, D., Miranda, K., Oliveira, O. N., Martins, R., Pereira, L., Marconcini, J. M., Fortunato, E. & Mattoso, L. H. C., 9 Jun 2021, In: ACS Applied Materials & Interfaces. 13, 22, p. 26237-26246 10 p.

Combining Soft with Hard Condensed Matter for Circular Polarized Light Sensing and Logic Operations

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Particle characteristics' influence on FLASH sintering of potassium sodium niobate: A relationship with conduction mechanisms

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Healable Cellulose Iontronic Hydrogel Stickers for Sustainable Electronics on Paper

Cunha, I., Martins, J., Gaspar, D., Bahubalindrani, P. G., Fortunato, E., Martins, R. & Pereira, L., Mar 2021, In: Advanced Electronic Materials. 7, 3, 2001166.

Fast and low-cost synthesis of MoS₂ nanostructures on paper substrates for near-infrared photodetectors

Cordeiro, N. J. A., Gaspar, C., de Oliveira, M. J., Nunes, D., Barquinha, P., Pereira, L., Fortunato, E., Martins, R., Laureto, E. & Lourenço, S. A., 1 Feb 2021, In: Applied Sciences. 11, 3, p. 1-15 15 p., 1234.

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Martins, R., Pereira, L., Barquinha, P., Carlos, E. & Fortunato, E., 2021, In: Digest of Technical Papers - SID International Symposium. 52, S2, p. 537-538 2 p.

AMORPHOUS MULTICOMPONENT DIELECTRIC BASED ON THE MIXTURE OF HIGH BAND GAP AND HIGH K MATERIALS, RESPECTIVE DEVICES AND MANUFACTURE

De Paiva Martins, R. F., Correia Fortunato, E. M., Cândido Barquinha, P. M., Nunes Pereira, L. M., Gonçalves, G. P., Hrovatin, D. K. & Kosec, M., 16 Nov 2020, IPC No. H01L 21/ 316 A I, Patent No. PL2462611T, Priority date 5 Aug 2009, Priority No. PT10470909A

The Role of Particle Contact in Densification of FLASH Sintered Potassium Sodium Niobate

Serrazina, R., Senos, A. M. O. R., Pereira, L., Dean, J. S., Reaney, I. M. & Vilarinho, P. M., 22 Oct 2020, In: European Journal of Inorganic Chemistry. 2020, 39, p. 3720-3728 9 p.

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Duarte, P., Pereira, S., Cunha, I., Pimentel, A., Dionísio, M., Fortunato, E., Martins, R. & Pereira, L., 14 Aug 2020, In: Frontiers in Materials . 7, 269.

Modelling the particle contact influence on the Joule heating and temperature distribution during FLASH sintering

Serrazina, R., Vilarinho, P. M., Senos, A. M. O. R., Pereira, L., Reaney, I. M. & Dean, J. S., 1 Apr 2020, In: Journal of the European Ceramic Society. 40, 4, p. 1205-1211 7 p.

Application of ultrasonic sprayed zirconium oxide dielectric in zinc tin oxide-based thin film transistor

Oluwabi, A. T., Katerski, A., Carlos, E., Branquinho, R., Mere, A., Krunks, M., Fortunato, E., Pereira, L. & Oja Acik, I., 21 Mar 2020, In: Journal of Materials Chemistry C. 8, 11, p. 3730-3739

Ionically Modified Cellulose Nanocrystal Self-Assembled Films with a Mesoporous Twisted Superstructure: Polarizability and Application in Ion-Gated Transistors

Grey, P., Fernandes, S. N., Gaspar, D., Deuermeier, J., Martins, R., Fortunato, E., Godinho, M. H. & Pereira, L., 25 Feb 2020, In: ACS Applied Electronic Materials. 2, 2, p. 426-436

Influence of Post-UV/Ozone Treatment of Ultrasonic-Sprayed Zirconium Oxide Dielectric Films for a Low-Temperature Oxide Thin Film Transistor

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Touch-Interactive Flexible Sustainable Energy Harvester and Self-Powered Smart Card

Ferreira, G., Goswami, S., Nandy, S., Pereira, L., Martins, R. & Fortunato, E., 1 Jan 2020, In: Advanced Functional Materials. 30, 5, 1908994.

AMORPHOUS MULTICOMPONENT DIELECTRIC BASED ON THE MIXTURE OF HIGH BAND GAP AND HIGH K MATERIALS, RESPECTIVE DEVICES AND MANUFACTURE

Martins, R. F. D. P., Fortunato, E. M. C., Pereira, L. M. N., Barquinha, P. M. C., Gonçalves, G. P., Hrovatin, D. K. & Kosec, M., 18 Dec 2019, IPC No. H01L 21/ 316 A I, Patent No. PT2462611T, Priority date 5 Aug 2009, Priority No. PT20090104709

Mechanism of densification in low-temperature FLASH sintered lead free potassium sodium niobate (KNN) piezoelectrics

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25.3: Invited Paper: Designing the Future with Sustainable Multifunctional Paper Platforms

Martins, R., Gaspar, D., Pereira, L. M. N. & Fortunato, E., 4 Oct 2019, In: Digest of Technical Papers - SID International Symposium. 50, S1, p. 253-254

Sustainable fully printed UV sensors on cork using zinc oxide/ethylcellulose inks

Figueira, J., Gaspar, C., Carvalho, J. T., Loureiro, J., Fortunato, E., Martins, R. & Pereira, L., 1 Sept 2019, In: Micromachines. 10, 9, 601.

Field-Effect Transistors on Photonic Cellulose Nanocrystal Solid Electrolyte for Circular Polarized Light Sensing

Grey, P., Fernandes, S. N., Gaspar, D., Fortunato, E., Martins, R., Godinho, M. H. & Pereira, L., 23 May 2019, In: Advanced Functional Materials. 29, 21(SI), 1805279.

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Role of structure and composition on the performances of P-type tin oxide thin-film transistors processed at low-temperatures

Barros, R., Saji, K. J., Waerenborgh, J. C., Barquinha, P., Pereira, L., Carlos, E., Martins, R. & Fortunato, E., 1 Mar 2019, In: Nanomaterials. 9, 3, 18 p., 320.

Fully printed zinc oxide electrolyte-gated transistors on paper

Carvalho, J. T., Dubceac, V., Grey, P., Cunha, I., Fortunato, E., Martins, R., Clausner, A., Zschech, E. & Pereira, L., 1 Feb 2019, In: Nanomaterials. 9, 2, 169.

Cellulose based functional materials in electrical and electrochemical flexible devices

Cunha, I., Gaspar, D., Grey, P., Carvalho, J. T., Fortunato, E., Martins, R. & Pereira, L., 2019, *International Conference on Nanotechnology for Renewable Materials 2019*. TAPPI Press, Vol. 1. p. 327-340 14 p.

Planar Dual-Gate Paper/Oxide Field Effect Transistors as Universal Logic Gates

Gaspar, D., Martins, J., Bahubalindrani, P., Pereira, L., Fortunato, E. & Martins, R., 1 Dec 2018, In: Advanced Electronic Materials. 4, 12, 1800423.

Proceso para usar y crear papel basado en fibras de celulosa natural o sintética o combinaciones de éstas como soporte físico y medio de almacenamiento de cargas eléctricas en transistores de efecto de campo de unión autosostenida con memoria utilizando óxidos semiconductores activos

Martins, R. F. D. P., Fortunato, E. M. C., Pereira, L. N., Barquinha, P. C. & Correia, N. F. D. O., 21 Sept 2018, IPC No. H01L 51/ 10 A I, Patent No. ES2682623T, 20 Mar 2009, Priority date 20 Mar 2008, Priority No. WO2009IB05053

Papertronics: Multigate paper transistor for multifunction applications

Martins, R., Gaspar, D., Mendes, M. J., Pereira, L., Martins, J., Bahubalindrani, P., Barquinha, P. & Fortunato, E., 1 Sept 2018, In: Applied Materials Today. 12, p. 402-414 13 p.

Paper electronics: a sustainable multifunctional platform

Fortunato, E., Gaspar, D., Cunha, I., Mendes, M., Vicente, A., Aguas, H., Marques, A. C., Pimentel, A., Nunes, D., Pereira, L. & Martins, R., 20 Aug 2018, *2018 76th Device Research Conference, DRC 2018*. Institute of Electrical and Electronics Engineers (IEEE), 8442238. (IEEE Device Research Conference Proceedings; vol. 2018-June).

Lagermedium til elektriske ladninger i selvbærende felteffekttransistorer med papirdielektrikum baseret på cellulosefibre og fremgangsmåde til fremstilling deraf

Martins, R. F. D. P., Fortunato, E. M. C., Correia, N. F. D. O., Pereira, L. M. N. & Barquinha, P. M. C., 13 Aug 2018, IPC No. H01L 51/ 10 A I, Patent No. DK2282359T, 20 Mar 2009, Priority date 20 Mar 2008, Priority No. WO2009IB05053

Influence of magnetron sputtering conditions on the chemical bonding, structural, morphological and optical behavior of Ta_{1-x}O_x coatings

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Metal oxide nanostructures: Synthesis, properties and applications

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Flexible thin film solar cells on cellulose substrates with improved light management

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Printable cellulose-based electroconductive composites for sensing elements in paper electronics

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Vicente, A. T., Araújo, A., Gaspar, D., Santos, L., Marques, A. C., Mendes, M. J., Pereira, L. M. N., Fortunato, E. & Martins, R., 22 Feb 2017, *Nanostructured Solar Cells*. Das, N. (ed.). InTech

Handwritten Oxide Electronics on Paper

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Sustainable cellulose containing inks for printed electronics on paper substrates

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Jin, J. W., Nathan, A., Barquinha, P., Pereira, L., Fortunato, E., Martins, R. & Cobb, B., 1 Aug 2016, In: RSC Advances. 6, 8, 085321.

Bacterial Nanocellulose: From Biotechnology to Bio-Economy: Optoelectronic Devices from Bacterial NanoCellulose

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Smart optically active VO₂ nanostructured layers applied in roof-type ceramic tiles for energy efficiency

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THE FRONT EDGE OF MATERIALS SOCIETAL CHALLENGES

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Synthesis of WO₃ nanoparticles for biosensing applications

Santos, L., Silveira, C. M., Elangovan, E., Neto, J. P., Nunes, D., Pereira, L., Martins, R., Viegas, J., Moura, J. J. G., Todorovic, S., Almeida, M. G. & Fortunato, E., 1 Feb 2016, In: *Sensors and Actuators B: Chemical*. 223, p. 186-194 9 p.

Metal oxide nanoparticle engineering for printed electrochemical applications

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Electrochemical transistor based on tungsten oxide with optoelectronic properties

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Nunes, D., Pimentel, A., Pinto, J. V., Calmeiro, T. R., Nandy, S., Barquinha, P., Pereira, L., Carvalho, P. A., Fortunato, E. & Martins, R., 2016, In: *Catalysis Today*. 278, p. 262-270 9 p.

Electrodeposition of WO₃ Nanoparticles for Sensing Applications

Santos, L. S. L., Neto, J., Crespo, A., Baião, P., Barquinha, P. M. C., Pereira, L. M. N., Martins, R. F. D. P. & Fortunato, E. M. C., 2 Dec 2015, *Electroplating of Nanostructures*. Aliofkhazraei, M. (ed.). InTech, p. 27-47

Engineered cellulose fibers as dielectric for oxide field effect transistors

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Activities

Journal of Materials Chemistry C (Journal)

Luis Miguel Nunes Pereira (Editorial board member)
2017 → ...

SPM - Sociedade Portuguesa de Materiais (External organisation)

Luis Miguel Nunes Pereira (Chair)
2017 → ...

2D Materials and Applications (Journal)

Luis Miguel Nunes Pereira (Editorial board member)
2016 → ...

E-MRS Spring Meeting 2015 (Event)

Luis Miguel Nunes Pereira (Chair)
2015

IEEE Electron Device Letters (Journal)

Luis Miguel Nunes Pereira (Editorial board member)
2015 → 2017

Materials Science in Semiconductor Processing (Journal)

Luis Miguel Nunes Pereira (Editorial board member)
2015 → 2017

Applied Physics Letters (Journal)

Luis Miguel Nunes Pereira (Editorial board member)
2014 → 2017

Electrochimica Acta (Journal)

Luis Miguel Nunes Pereira (Editorial board member)
2014 → 2017

EMRS Spring Meeting 2014 (Event)

Luis Miguel Nunes Pereira (Chair)
2014

PHYSICA STATUS SOLIDI A (Journal)

Luis Miguel Nunes Pereira (Editorial board member)
2014 → 2017

Physica Status Solidi-Rapid Research Letters (Journal)

Luis Miguel Nunes Pereira (Editorial board member)
2014 → 2017

EMRS Fall Meeting (Event)

Luis Miguel Nunes Pereira (Chair)
2013

Semiconductor Science And Technology (Journal)

Luis Miguel Nunes Pereira (Editorial board member)
2012 → 2017

Solar Energy Materials and Solar Cells (Journal)

Luis Miguel Nunes Pereira (Editorial board member)
2012 → 2017

THIN SOLID FILMS (Journal)

Luis Miguel Nunes Pereira (Editorial board member)
2012 → 2017

EMRS Fall Meeting 2011 (Event)

Luis Miguel Nunes Pereira (Chair)
2011

Awards

Best SID paper, Korean Information Display Society/Korea
Pereira, Luís Miguel Nunes (Recipient), 2010

ERC Starting Grant, New-Fun, New era of printed paper electronics based on advanced functional cellulose
Pereira, Luís Miguel Nunes (Recipient), 2015

Innovation award

Fortunato, Elvira Maria Correia (Recipient), Martins, Rodrigo Ferrão de Paiva (Recipient), Pereira, Luís Miguel Nunes (Recipient), Barquinha, Pedro Miguel Cândido (Recipient), Goes, João Carlos da Palma (Recipient) & Oliveira, João Pedro Abreu de (Recipient), 2017

R&D Green Project Award

Pereira, Luís Miguel Nunes (Recipient), 2009

Projects

Teaming: E-powerTrain prEdictive mAintenance using physics inforMed learning

Pereira, L. M. N.

European Commission: €151,800.00

1/01/24 → 31/12/27