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## Research interests

Transparent electronics, Thin film transistors, Metal oxide semiconductors, Thin films, Microelectronics Nanotechnology, Biosensors

B.Sc. in Physics and Materials Engineering (1987, FCT/UNL); Equivalent academic master course - Semiconductor Materials (1991, FCT/UNL). Ph.D. in Materials Engineering: Microelectronics and Optoelectronics (1995, FCT/UNL). Aggregate in Microelectronics and Optoelectronics (2005). Associate Professor of FCT/UNL and Full Member of CENIMAT. Full Member of CENIMAT and Head of CENIMAT. Main scientific interests: Devices Based on Amorphous Semiconductors and Oxide Semiconductors. Optoelectronics, Microelectronics and Nanoelectronics. Transparent Flexible Electronics.

### Short CV

Elvira Fortunato is full professor in Materials Science Department of Faculty of Science and Technology of New University of Lisbon, a Fellow of the Portuguese Engineering Academy since 2009 and decorated with the grade of Grand Officer of the Order of Prince Henry the Navigator by the President of the Republic in 2010, due to her scientific achievements worldwide. In 2015 she was appointed by the Portuguese President Chairman of the Organizing Committee of the Celebrations of the National Day of Portugal, Camões and the Portuguese Communities.

She was also a member of the Portuguese National Scientific and Technological Council between 2012-2015 and a member of the advisory board of DG CONNECT (2014-2015). Since November 2015 she became Deputy Adviser of the High Level Group of Scientific Advice Mechanism from DG Research & Innovation European Commission.

Currently she is the director of the Institute of Nanomaterials, Nanofabrication and Nanomodeling and of CENIMAT. She is member of the board of trustees of Luso-American Foundation (Portugal/USA, 2013-2020).

Fortunato pioneered European research on transparent electronics, namely thin-film transistors based on oxide semiconductors, demonstrating that oxide materials can be used as true semiconductors. In 2008, she earned in the 1st ERC edition an AdG for the project "Invisible", considered a success story. In the same year she demonstrated with her colleagues the possibility to make the first paper transistor, starting a new field in the area of paper electronics.

Fortunato published over 500 papers and during the last 10 years got more than 16 International prizes and distinctions for her work (e.g. IDTechEx USA 2009 (paper transistor); European Woman Innovation prize, Finland 2011).

## Research outputs

- Ta<sub>2</sub>O<sub>5</sub>/SiO<sub>2</sub> Multicomponent Dielectrics for Amorphous Oxide TFTs**  
Martins, J., Kiazadeh, A., Pinto, J. V., Rovisco, A., Gonçalves, T., Deuermeier, J., Alves, E., Martins, R., Fortunato, E. & Barquinha, P., 29 Dec 2020, In: *Electronic Materials*. 2, 1, p. 1-16
- Solution combustion synthesis of transparent conducting thin films for sustainable photovoltaic applications**  
Ullah, S., Branquinho, R., Mateus, T., Martins, R., Fortunato, E., Rasheed, T. & Sher, F., 13 Dec 2020, In: *Sustainability (Switzerland)*. 12, 24, p. 1-15 15 p., 10423.
- Supramolecular protein polymers using mini-ferritin Dps as the building block**  
Pacheco, M. R., Jacinto, J. P., Penas, D., Calmeiro, T., Almeida, A. V., Colaço, M., Fortunato, E., Jones, N. C., Hoffmann, S. V., Pereira, M. M. A., Tavares, P. & Pereira, A. S., 7 Dec 2020, In: *Organic and Biomolecular Chemistry*. 18, 45, p. 9300-9307 8 p.
- Enhanced electrical and photocatalytic properties of porous TiO<sub>2</sub> thin films decorated with Fe<sub>2</sub>O<sub>3</sub> nanoparticles**  
Landolsi, Z., Ben Assaker, I., Nunes, D., Fortunato, E., Martins, R., Chtourou, R. & Ammar, S., Dec 2020, In: *Journal of Materials Science: Materials in Electronics*. 31, 23, p. 20753-20773 21 p.
- Hydrophobic modification of bacterial cellulose using oxygen plasma treatment and chemical vapor deposition**  
Leal, S., Cristelo, C., Silvestre, S., Fortunato, E., Sousa, A., Alves, A., Correia, D. M., Lanceros-Mendez, S. & Gama, M., Dec 2020, In: *Cellulose*. 27, 18(SI), p. 10733-10746

6. **Laser-Induced Graphene Piezoresistive Sensors Synthesized Directly on Cork Insoles for Gait Analysis**  
Carvalho, A. F., Fernandes, A. J. S., Martins, R., Fortunato, E. & Costa, F. M., Dec 2020, In: *Advanced Materials Technologies*. 5, 12, 2000630.
7. **Millimeter-sized few-layer suspended graphene membranes**  
Carvalho, A. F., Fernandes, A. J. S., Ben Hassine, M., Ferreira, P., Fortunato, E. & Costa, F. M., Dec 2020, In: *Applied Materials Today*. 21, 100879.
8. **Toward stable solution-processed high-mobility P-type thin film transistors based on halide perovskites**  
Jana, S., Carlos, E., Panigrahi, S., Martins, R. & Fortunato, E., 24 Nov 2020, In: *ACS Nano*. 14, 11, p. 14790-14797 8 p.
9. **Silver nanocomposites based on the bacterial fucose-rich polysaccharide secreted by *Enterobacter A47* for wound dressing applications: Synthesis, characterization and in vitro bioactivity**  
Concórdio-Reis, P., Pereira, C. V., Batista, M. P., Sevrin, C., Grandfils, C., Marques, A. C., Fortunato, E., Gaspar, F. B., Matias, A. A., Freitas, F. & Reis, M. A. M., 15 Nov 2020, In: *International Journal of Biological Macromolecules*. 163, p. 959-969 11 p.
10. **Toward a Microencapsulated 3D hiPSC-Derived in vitro Cardiac Microtissue for Recapitulation of Human Heart Microenvironment Features**  
Abecasis, B., Canhão, P. G. M., Almeida, H. V., Calmeiro, T., Fortunato, E., Gomes-Alves, P., Serra, M. & Alves, P. M., 5 Nov 2020, In: *Frontiers in Bioengineering and Biotechnology*. 8, 580744.
11. **Light trapping in solar cells: Simple design rules to maximize absorption**  
Li, K., Haque, S., Martins, A., Fortunato, E., Martins, R., Mendes, M. J. & Schuster, C. S., 20 Oct 2020, In: *Optica*. 7, 10, p. 1377-1384 8 p.
12. **Paper-based in-situ gold nanoparticle synthesis for colorimetric, non-enzymatic glucose level determination**  
Pinheiro, T., Ferrão, J., Marques, A. C., Oliveira, M. J., Batra, N. M., Costa, P. M. F. J., Macedo, M. P., Águas, H., Martins, R. & Fortunato, E., 14 Oct 2020, In: *Nanomaterials*. 10, 10, p. 1-20 20 p., 2027.
13. **Noble-Metal-Free Memristive Devices Based on IGZO for Neuromorphic Applications**  
Pereira, M., Deuermeier, J., Nogueira, R., Carvalho, P. A., Martins, R., Fortunato, E. & Kiazadeh, A., 1 Oct 2020, In: *Advanced Electronic Materials*. 6, 10, 2000242.
14. **Microneedle Arrays of Polyhydroxyalkanoate by Laser-Based Micromolding Technique**  
Silvestre, S. L., Araújo, D., Marques, A. C., Pires, C., Matos, M., Alves, V., Martins, R., Freitas, F., Reis, M. A. M. & Fortunato, E., 21 Sep 2020, In: *ACS Applied Bio Materials*. 3, 9, p. 5856-5864 9 p.
15. **Substrate temperature influenced ZrO<sub>2</sub> films for MOS devices**  
Kondaiah, P., Jagadish Chandra, S. V., Fortunato, E., Chel Jong, C., Mohan Rao, G., Koti Reddy, D. V. R. & Uthanna, S., 1 Sep 2020, In: *Surface And Interface Analysis*. 52, 9, p. 541-546 6 p.
16. **Design of wave-optical structured substrates for ultra-thin perovskite solar cells**  
Haque, S., Alexandre, M., Mendes, M. J., Águas, H., Fortunato, E. & Martins, R., Sep 2020, In: *Applied Materials Today*. 20, 100720.
17. **Sunlight-driven CO<sub>2</sub>-to-fuel conversion: Exploring thermal and electrical coupling between photovoltaic and electrochemical systems for optimum solar-methane production**  
Lourenço, A. C., Reis-Machado, A. S., Fortunato, E., Martins, R. & Mendes, M. J., Sep 2020, In: *Materials Today Energy*. 17, 100425.
18. **Cellulose-Based Solid Electrolyte Membranes Through Microwave Assisted Regeneration and Application in Electrochromic Displays**  
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.
19. **Self-Cleaned Photonic-Enhanced Solar Cells with Nanostructured Parylene-C**  
Centeno, P., Alexandre, M. F., Chapa, M., Pinto, J. V., Deuermeier, J., Mateus, T., Fortunato, E., Martins, R., Águas, H. & Mendes, M. J., 1 Aug 2020, In: *Advanced Materials Interfaces*. 7, 15, 2000264.
20. **Industrial Waste Residue Converted into Value-Added ZnO for Optoelectronic Applications**  
Ferreira, S. H., Deuermeier, J., Sequeira, S., Nunes, D., Gonçalves, A., Martins, R., Monteiro, R. & Fortunato, E., 28 Jul 2020, In: *ACS Applied Electronic Materials*. 2, 7, p. 1960-1969 10 p.
21. **Orientation dependence of electrical properties of polycrystalline Cu<sub>2</sub>O thin films**  
Tibério, M., Calmeiro, T., Nandy, S., Nunes, D., Martins, R., Fortunato, E. & Deuermeier, J., Jul 2020, In: *Semiconductor Science And Technology*. 35, 7, 075016.
22. **Paper-Based Platform with an in Situ Molecularly Imprinted Polymer for  $\beta$ -Amyloid**  
Pereira, M. V., Marques, A. C., Oliveira, D., Martins, R., Moreira, F. T. C., Sales, M. G. F. & Fortunato, E., 2 Jun 2020, In: *ACS Omega*. 5, 21, p. 12057-12066 10 p.
23. **Paper-based (bio)sensor for label-free detection of 3-nitrotyrosine in human urine samples using molecular imprinted polymer**  
Martins, G. V., Marques, A. C., Fortunato, E. & Sales, M. G. F., Jun 2020, In: *Sensing and Bio-Sensing Research*. 28, 100333.

24. **Electrochromic Device Composed of a Di-Urethanesil Electrolyte Incorporating Lithium Triflate and 1-Butyl-3-Methylimidazolium Chloride**  
Gonçalves, M. C., Pereira, R. F. P., Alves, R., Nunes, S. C., Fernandes, M., Gonçalves, H. M. R., Pereira, S., Silva, M. M., Fortunato, E., Rego, R. & de Zea Bermudez, V., 27 May 2020, In: *Frontiers in Materials* . 7, 139.
25. **Laser induced ultrafast combustion synthesis of solution-based AlO<sub>x</sub> for thin film transistors**  
Carlos, E., Dellis, S., Kalfagiannis, N., Koutsokeras, L., Koutsogeorgis, D. C., Branquinho, R., Martins, R. & Fortunato, E., 14 May 2020, In: *Journal of Materials Chemistry C*. 8, 18, p. 6176-6184 9 p.
26. **Piezoelectricity Enhancement of Nanogenerators Based on PDMS and ZnSnO<sub>3</sub> Nanowires through Microstructuration**  
Rovisco, A., Dos Santos, A., Cramer, T., Martins, J., Branquinho, R., Águas, H., Fraboni, B., Fortunato, E., Martins, R., Igreja, R. & Barquinha, P., 22 Apr 2020, In: *Acs Applied Materials & Interfaces*. 12, 16, p. 18421-18430 10 p.
27. **ZnO nanostructures grown on ITO coated glass substrate by hybrid microwave-assisted hydrothermal method**  
Filip, A., Musat, V., Tigau, N., Polosan, S., Pimentel, A., Ferreira, S., Gomes, D., Calmeiro, T., Martins, R. & Fortunato, E., Apr 2020, In: *Optik*. 208, 164372.
28. **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
29. **Fast prototyping microfluidics: Integrating droplet digital lamp for absolute quantification of cancer biomarkers**  
Oliveira, B., Veigas, B., Fernandes, A. R., Águas, H., Martins, R., Fortunato, E. & Baptista, P. V., 14 Mar 2020, In: *Sensors (Switzerland)*. 20, 6, 1624.
30. **Low temperature dissolution of yeast Chitin-Glucan complex and characterization of the regenerated polymer**  
Araújo, D., Alves, V. D., Marques, A. C., Fortunato, E., Reis, M. A. M. & Freitas, F., 14 Mar 2020, In: *Bioengineering*. 7, 1, 28.
31. **Printed, Highly Stable Metal Oxide Thin-Film Transistors with Ultra-Thin High-κ Oxide Dielectric**  
Carlos, E., Leppäniemi, J., Sneck, A., Alastalo, A., Deuermeier, J., Branquinho, R., Martins, R. & Fortunato, E., 1 Mar 2020, In: *Advanced Electronic Materials*. 6, 3, 1901071.
32. **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
33. **TiO<sub>2</sub> nanostructured films for electrochromic paper based-devices**  
Nunès, D., Freire, T., Barranger, A., Vieira, J., Matias, M., Pereira, S., Pimentel, A., Cordeiro, N. J. A., Fortunato, E. & Martins, R., 11 Feb 2020, In: *Applied Sciences (Switzerland)*. 10, 4, 1200.
34. **2D Resistive Switching Based on Amorphous Zinc-Tin Oxide Schottky Diodes**  
Casa Branca, N., Deuermeier, J., Martins, J., Carlos, E., Pereira, M., Martins, R., Fortunato, E. & Kiazadeh, A., 1 Feb 2020, In: *Advanced Electronic Materials*. 6, 2, 1900958.
35. **Demonstration of the ability of the bacterial polysaccharide FucoPol to flocculate kaolin suspensions**  
Araújo, D., Concórdio-Reis, P., Marques, A. C., Sevrin, C., Grandfils, C., Alves, V. D., Fortunato, E., Reis, M. A. M. & Freitas, F., 28 Jan 2020, In: *Environmental Technology (United Kingdom)*. 41, 3, p. 287-295 9 p.
36. **Photonic-structured TCO front contacts yielding optical and electrically enhanced thin-film solar cells**  
Sanchez-Sobrado, O., Mendes, M. J., Mateus, T., Costa, J., Nunes, D., Águas, H., Fortunato, E. & Martins, R., 15 Jan 2020, In: *Solar Energy*. 196, p. 92-98 7 p.
37. **Control of eu oxidation state in Y<sub>2</sub>O<sub>3</sub>-xSx:Eu thin-film phosphors prepared by atomic layer deposition: A structural and photoluminescence study**  
Rosa, J., Deuermeier, J., Soininen, P. J., Bosund, M., Zhu, Z., Fortunato, E., Martins, R., Sugiyama, M. & Merdes, S., 1 Jan 2020, In: *Materials*. 13, 1, 93.
38. **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.
39. **Low-Voltage High-Speed Ring Oscillator with a-InGaZnO TFTs**  
Tiwari, B., Bahubalindrani, P. G., Santos, Â., Santa, A., Figueiredo, C., Pereira, M., Martins, R., Fortunato, E. & Barquinha, P., 2020, In: *IEEE Journal of the Electron Devices Society*. 8, p. 584-588 5 p., 9099219.
40. **Rail-to-Rail Timing Signals Generation Using InGaZnO TFTs for Flexible X-Ray Detector**  
Bahubalindrani, P. G., Barquinha, P., Tiwari, B., Pereira, M., Santa, A., Martins, J., Rovisco, A., Tavares, V., Martins, R. & Fortunato, E., 2020, In: *IEEE Journal of the Electron Devices Society*. 8, p. 157-162 6 p., 8981936.
41. **Paper-Based SERS Platform for One-Step Screening of Tetracycline in Milk**  
Marques, A., Veigas, B., Araújo, A., Pagará, B., Baptista, P. V., Águas, H., Martins, R. & Fortunato, E., 1 Dec 2019, In: *Scientific Reports*. 9, 1, 17922.

42. **Prediction of sunlight-driven CO<sub>2</sub> conversion: Producing methane from photovoltaics, and full system design for single-house application**  
Vieira, F., Sarmiento, B., Reis-Machado, A. S., Facção, J., Carvalho, M. J., Mendes, M. J., Fortunato, E. & Martins, R., 1 Dec 2019, In: *Materials Today Energy*. 14, 100333.
43. **Design and simple assembly of gold nanostar bioconjugates for surface-enhanced raman spectroscopy immunoassays**  
Oliveira, M. J., de Almeida, M. P., Nunes, D., Fortunato, E., Martins, R., Pereira, E., Byrne, H. J., Águas, H. & Franco, R., 1 Nov 2019, In: *Nanomaterials*. 9, 11, 1561.
44. **Hybrid (Ag)ZnO/Cs/PMMA nanocomposite thin films**  
Viorica, G. P., Musat, V., Pimentel, A., Calmeiro, T. R., Carlos, E., Baroiu, L., Martins, R. & Fortunato, E., 30 Sep 2019, In: *Journal Of Alloys And Compounds*. 803, p. 922-933 12 p.
45. **Mapping the space charge carrier dynamics in plasmon-based perovskite solar cells**  
Panigrahi, S., Jana, S., Calmeiro, T., Nunes, D., Deuermeier, J., Martins, R. & Fortunato, E., 14 Sep 2019, In: *Journal of Materials Chemistry A*. 7, 34, p. 19811-19819 9 p.
46. **Biowaste-derived carbon black applied to polyaniline-based high-performance supercapacitor microelectrodes: Sustainable materials for renewable energy applications**  
Goswami, S., Dillip, G. R., Nandy, S., Banerjee, A. N., Pimentel, A., Joo, S. W., Martins, R. & Fortunato, E., 1 Sep 2019, In: *Electrochimica Acta*. 316, p. 202-218 17 p.
47. **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 Sep 2019, In: *Micromachines*. 10, 9, 601.
48. **Tailoring IGZO composition for enhanced fully solution-based thin film transistors**  
Moreira, M., Carlos, E., Dias, C., Deuermeier, J., Pereira, M., Barquinha, P., Branquinho, R., Martins, R. & Fortunato, E., 1 Sep 2019, In: *Nanomaterials*. 9, 9, 1273.
49. **Colloidal-structured metallic micro-grids: High performance transparent electrodes in the red and infrared range**  
Torrise, G., Luis, J. S., Sanchez-Sobrado, O., Raciti, R., Mendes, M. J., Águas, H., Fortunato, E., Martins, R. & Terrasi, A., 1 Aug 2019, In: *Solar Energy Materials and Solar Cells*. 197, p. 7-12 6 p.
50. **Towards Oxide Electronics: a Roadmap**  
Coll, M., Fontcuberta, J., Althammer, M., Bibes, M., Boschker, H., Calleja, A., Cheng, G., Cuoco, M., Dittmann, R., Dkhil, B., El Baggari, I., Fanciulli, M., Fina, I., Fortunato, E., Frontera, C., Fujita, S., Garcia, V. J., Goennenwein, S. T. B., Granqvist, C. G., Grollier, J. & 36 others, Gross, R., Hagfeldt, A., Herranz, G., Hono, K., Houwman, E. P., Huijben, M., Kalaboukhov, A. S., Keeble, D. J., Koster, G., Kourkoutis, L. F., Levy, J. M., Lira-Cantú, M., MacManus-Driscoll, J. L., Mannhart, J. D., Martins, R., Menzel, S., Mikolajick, T., Napari, M., Nguyen, M. D., Niklasson, G. A., Paillard, C., Panigrahi, S., Rijnders, G. J. H. M., Sánchez, F., Sanchis, P., Sanna, S., Schlom, D. G., Schroeder, U. P., Shen, K. M., Siemon, A., Spreitzer, M., Sukegawa, H., Tamayo, R., van den Brink, J., Pryds, N. H. & Granozio, F. M., 15 Jul 2019, In: *Applied Surface Science*. 482, SI, p. 1-93 93 p.
51. **Growth mechanism of seed-layer free ZnSnO<sub>3</sub> nanowires: effect of physical parameters**  
Rovisco, A., Branquinho, R., Martins, J., Fortunato, E., Martins, R. & Barquinha, P., 1 Jul 2019, In: *Nanomaterials*. 9, 7, 1002.
52. **Nanofluid Based on Glucose-Derived Carbon Dots Functionalized with [Bmim]Cl for the Next Generation of Smart Windows**  
Gonçalves, H. M. R., Pereira, R. F. P., Lepleux, E., Carlier, T., Pacheco, L., Pereira, S., Valente, A. J. M., Fortunato, E., Duarte, A. J. & de Zea Bermudez, V., 1 Jul 2019, In: *ADVANCED SUSTAINABLE SYSTEMS*. 3, 7, 1900047.
53. **All-Thin-Film Perovskite/C-Si Four-Terminal Tandems: Interlayer and Intermediate Contacts Optimization**  
Chapa, M., Alexandre, M. F., Mendes, M. J., Águas, H., Fortunato, E. & Martins, R., 24 Jun 2019, In: *ACS Applied Energy Materials*. 2, 6, p. 3979-3985 7 p.
54. **Antibody modified gold nanoparticles for fast colorimetric screening of rheumatoid arthritis**  
Veigas, B., Matias, A., Calmeiro, T., Fortunato, E., Fernandes, A. R. & Baptista, P. V., 7 Jun 2019, In: *Analyst*. 144, 11, p. 3613-3619 7 p.
55. **Lightwave trapping in thin film solar cells with improved photonic-structured front contacts**  
Sanchez-Sobrado, O., Mendes, M. J., Haque, S., Mateus, T., Águas, H., Fortunato, E. & Martins, R., 7 Jun 2019, In: *Journal of Materials Chemistry C*. 7, 21, p. 6456-6464 9 p.
56. **Human-motion interactive energy harvester based on polyaniline functionalized textile fibers following metal/polymer mechano-responsive charge transfer mechanism**  
Goswami, S., Santos, A. D., Nandy, S., Igreja, R., Barquinha, P., Martins, R. & Fortunato, E., 1 Jun 2019, In: *Nano Energy*. 60, p. 794-801 8 p.
57. **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.

58. **Photonic-structured TiO<sub>2</sub> for high-efficiency, flexible and stable Perovskite solar cells**  
Haque, S., Mendes, M. J., Sanchez-Sobrado, O., Águas, H., Fortunato, E. & Martins, R., 1 May 2019, In: Nano Energy. 59, p. 91-101 11 p.
59. **Optimum Luminescent Down-Shifting Properties for High Efficiency and Stable Perovskite Solar Cells**  
Alexandre, M., Chapa, M., Haque, S., Mendes, M. J., Águas, H., Fortunato, E. & Martins, R., 22 Apr 2019, In: ACS Applied Energy Materials. 2, 4, p. 2930-2938 9 p.
60. **Sustainable Dual-Mode Smart Windows for Energy-Efficient Buildings**  
Nunes, S. C., Saraiva, S. M., Pereira, R. F. P., Pereira, S., Silva, M. M., Carlos, L. D., Fortunato, E., Ferreira, R. A. S., Rego, R. & Bermudez, V. D. Z., 25 Mar 2019, In: ACS Applied Energy Materials. 2, 3, p. 1951-1960 10 p.
61. **Ultrafast Low-Temperature Crystallization of Solar Cell Graded Formamidinium-Cesium Mixed-Cation Lead Mixed-Halide Perovskites Using a Reproducible Microwave-Based Process**  
Brites, M. J., Barreiros, M. A., Corregidor, V., Alves, L. C., Pinto, J. V., Mendes, M. J., Fortunato, E., Martins, R. & Mascarenhas, J., 25 Mar 2019, In: ACS Applied Energy Materials. 2, 3, p. 1844-1853 10 p.
62. **Three-Mode Modulation Electrochromic Device with High Energy Efficiency for Windows of Buildings Located in Continental Climatic Regions**  
Cardoso, M. A., Pereira, R. F. P., Pereira, S., Gonçalves, H., Silva, M. M., Carlos, L. D., Nunes, S. C., Fortunato, E., Ferreira, R. A. S., Rego, R. & Bermudez, V. D. Z., 3 Mar 2019, In: ADVANCED SUSTAINABLE SYSTEMS. 3, 3, 1800115.
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64. **Sol-gel processed p-type CuAlO<sub>2</sub> semiconductor thin films and the integration in transistors**  
Wang, C., Zhu, H., Meng, Y., Nie, S., Zhao, Y., Shin, B., Fortunato, E., Martins, R., Shan, F. & Liu, G., 1 Mar 2019, In: Ieee Transactions On Electron Devices. 66, 3, p. 1458-1463 6 p., 8630855.
65. **E-Skin Bimodal Sensors for Robotics and Prosthesis Using PDMS Molds Engraved by Laser**  
Dos Santos, A., Pinela, N., Alves, P., Santos, R., Farinha, R., Fortunato, E., Martins, R., Águas, H. & Igreja, R., 21 Feb 2019, In: Sensors (Basel, Switzerland). 19, 4, p. 1-15 899.
66. **Multi-Level Cell Properties of a Bilayer Cu<sub>2</sub>O/Al<sub>2</sub>O<sub>3</sub> Resistive Switching Device**  
Deuermeier, J., Kiazadeh, A., Klein, A., Martins, R. & Fortunato, E., 19 Feb 2019, In: Nanomaterials. 9, 2, 289.
67. **Tailoring Upconversion and Morphology of Yb/Eu Doped Y<sub>2</sub>O<sub>3</sub> Nanostructures by Acid Composition Mediation**  
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