CURRICULA VITÆ

Name: Rodrigo Ferrão de Paiva Martins

Place and date of birth: Nova Lisboa, September 15th, 1951

Nationality: Portuguese

Institutional address: Departamento de Ciências dos Materiais da Faculdade de Ciências e Tecnologia da Universidade Nova de Lisboa, Quinta da Torre, 2829-506 Monte de Caparica

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Academic degrees, fields of study, awarding institutions, dates in reverse chronological order

Aggregation in "Materials Engineering, speciality of Semiconductor Materials and Microelectronics" (1988), at Universidade Nova de Lisboa.

PhD in "Energy Conversion and Semiconductor Materials" at Faculdade de Ciências e Tecnologia-Universidade Nova de Lisboa (1982).

MSc in "Amorphous Semiconductors Technologies", at University of Dundee (Scotland) (1977).

Engineering degree in "Engenharia Electrónica" at "Universidade de Luanda" (Angola) (1974).

Present position, institution, starting date

- Member of the working group responsible for launching the "I3N, the Institute of Nanostructures, Nanomodelling and Nanofabrication", constituted as a Laboratório Associado in the area of nanotechnologies, since 16November 2006 and involving CENIMAT, the Institute of Polymers and Composites of Un. Minho and the research Centre in Semiconductor Physics, Optoelectronics and disordered systems of Un. Aveiro.
- Member of the Executive Committee of European Materials Research Society, EMRS (re-elected in 2006) and of the European Materials Forum, EMF;
- President of the Materials Science Department of FCT-UNL (2005/2008).
- Member of board direction of the Portuguese Material Science and Engineering Network, involving 8 public Universities: IST, Un. Aveiro, UNL, Un. Coimbra, Un. Porto and Un. Minho, since 2004
- Full Professor of New University of Lisbon, in Materials Science (Microelectronics and Optoelectronics), since 2001.
- Member of the International Advisory committee of the International Conference on amorphous and nanocrystalline semiconductors, since 1999.
- Delegate to the Initiative for Science in Europe, representing EMRS/EMF (Since November 2004);
- Founder of the "Centro de Investigação em Materiais, CENIMAT" and actual responsible for the Electronic and Optoelectronic Materials and Nanotechnologies group, scientific unit rated as Excellent by an external Scientific Panel, named by the Portuguese Scientific Foundation for Science and Technology, since 1996.
- Founder and Head of CEMOP/UNINOVA, since 1992.

Previous positions, institutions, dates in reverse chronological order

- *Head of Materials* Science Department of FCTUNL, from 1988 to 1994 and from 1996 to 2008,

- *Associated Professor* of New University of Lisbon, from 1986 to 2000;
- *Assistant Professor* of the of the New University of Lisbon, in the field of Materials Engineering, specialised in semiconductor materials and microelectronic at DCM-FCTUNL, from 1982 to 1986,
- *Assistant* in FCTUNL at the Department of Physics and Materials Science, from 1979 to 1982,
- Member of the scientific and administrative board of Centre of Molecular Physics of the Universities of Lisbon (CFMUL) at Complex I (1980, 1982).
- Assistant in the Faculty of Engineering in Oporto University, from 1975 to 19777;
- Assistant in the University of Luanda (1974/75).

Main scientific area of research:

- Electronic materials and their applications to electronic devices using nanotechnology tools;
- Bio-sensors and Gas sensors.
- Transparent Electronics and related nanotechnologies, since 2002;
- Amorphous/Nanocrystalline silicon and their related oxides and technologies for device applications (microelectronics and optoelectronics, since 1994;
- Production and electro-optical characterisation of a/micro-Si:H films and related alloys for photovoltaic applications (since 1987);
- Development of optoelectronic devices based on a/μc-Si:H films and its alloys technology (since 1986).
- Thin film conductive oxides; development of MOS Technology.

Other scientific areas of interest

- Thin film transistors;
- Photovoltaic devices and systems (since 1988);
- Position detector (since 1994);
- Development of New soldering techniques; hard coatings; Device encapsulation techniques and technologies;
- Development of thin film technologies, namely PECVD, HW-CVD and triode type sputtering systems, for producing semiconductors and micro/opto-electronic devices (since 1990);
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Supervision of post-graduate students

Supervision and co-supervision of 15 PhD thesis, namely:

- A. Branquinho, 1990/93, in the area of Semiconductor materials (co-supervision);
- Manuela Vieira, 1987/93, Optoelectronic properties of a-Si:H;
- E. Fortunato, 1992/95, Optoelectronic Sensors based on thin film technology;
- C. N. Carvalho, 1989/96, Energy Conversion;
- A. Fantoni, 1995/1999, Modeling and Simulation of Solar Cells
- Mei Sen (Vitro ceramic substrates for microelectronics (2001) (co-supervision);
- I. Ferreira, 1998/002, Processing and Characterization of films by hot wire cvd.
- H. Águas, Position Sensors based on heterostructures (2005) (co-supervision);

- L. Raniero, in Nanostructured Si solar cells, concluded in 2006;
- L: Pereira, in high-k dielectrics and their application in poly-Si TFT. To be concluded in 2006/2007.
- M. Fernandes, Colour Sensors, to be concluded in 2007;
- J. Contreras, 3-D Position sensors applied to Robotics (to be finished in 2008/2009) (co-supervision)
- P. Barquinha, in transparent oxided based TFT (to be finished in 2008/2009) (co-supervision);
- A. Gonçalves, in OLED and their integration with TTFT (to be finished in 2009/2010) (co-supervision)
- L. Silva, Optical sensors applied to Bio-detection (to be finished in 2009/2010) (co-supervision).

Supervision and co-supervision of MSc thesis:

- H. Águas (1999) in PECVD technologies;
- Mª J. Rodrigues, Solar architecture applied to intelligent buildings (2000) (CO-SUPERVISOR).
- G. Evans (1996), amorphous silicon properties;
- P. Louro optical spectroscopy anf FTIR of amorphous silicon films (1997).

Coordination of externally funded research projects within the triennial period 2003/2005.

I) National projects

i. **"**Transparent Thin Film Transistors based on ZnO for flexible display applications". Project POCTI/CTM/55942/2004. Parceiros: CENIMAT (coordenador), CEMOP.

ii. "Development of transparent p-type oxide semiconductors: from processing to device applications". Projecto POCTI/CTM/55945/2004. Parceiros: CENIMAT (coordenador), CEMOP, U. Aveiro, ITN.

iii. "256-512 arrays of linear position sensors for optical camera inspections -SENSIT", POE, acção B3, medida 3.1 (2004/2007), ref. 03/00197. UNINOVA/CEMOP (coordenador)+CENIMAT+Tekelec);

iv. "Development of IR c-Si photodetector -IRS". POE, accção B3, medida 3.1 (2002/2005), ref. 03/00198. UNINOVA/CEMOP (coordenador) + CENIMAT+CSP.

v. "Development of flexible inorganic and organic optoelectronic devices". Program CAPES/GRICES (2003/2007). Parceiros: DCM/FCTUNL; CEMOP (UNINOVA); USP (Brasil)

vi.

vii. "Intelligent Colour Sensors" Projecto POCTI/CTM/37344/2001. Parceiros: CENIMAT e UNINOVA/CEMOP (coordenador).

viii. "A one-step electropolimerisation of polypyrrole on metallic oxidizables surfaces in aqueous solution". Projecto POCTI/CTM/41136/2001. Parceiros: FEUP (coordenador), CENIMAT e IST.

ix.

x. "Solid state time – METES" POSI/6250- Invest. Em consórcio 2002/2005. Parceiros: Tekelec, CENIMAT e UNINOVA/CEMOP (co-coordenador).

xi. "Self-powered Intelligent Windows based on photo-electrochromatic structures#. "Projecto POCTI/CTM/48853/2002 (2004/2007). Parceiros CENIMAT (coordenador), CEMOP, U.M. (Dept Física).

II) International projects

1. "International Centre for Graduate Education in Micro- and Nano-Engineering (MNE)", Europe links Asia, proposal accepted in January 2007 for second phase in Marie Curie actions. Partners: Ireland (University College Cork, Cork), coordinator; Portugal (University of Lisbon), China (Fudan University, Shanghai), and Indian Institute of Science, Bangalore
2. "Multicomponent Oxides for Flexible and Transparent Electronics-MULTIFLEXIOXIDES", FP6-2004-TI-4" – Proposal n° 032231 (2006/2009). Partners:: Uninova (PT), **coordinator**; Tyndall (IR); CENIMAT (PT); U. Barcelona (ES); HP (IR); FIAT (IT); J. Stefan Institute (SI). Starting data 1st September 2006. to December 2009.
3. "Investigation of the electrical stability of thin film transistors with active channel layers based on amorphous multicomponent metal oxides – STABOXI", project financed by SAIT/Samsung. Starting date: march 2006. Partners: CENIMAT, **coordinator**, CEMOP and SAIT/Korea.
4. "Low-temperature sputter deposition exploration/ optimization of multi-component, amorphous and nanostructured heavy metal cation oxides for TFT and TTFT channel layer application, FLAD. Partners: CEMOP/ UNINOVA, CENIMAT (Portugal), Electronics department of Oregon State University. (2005/2008. waiting for finance support from FCT-Portugal).
5. Advanced Handling and Assembly in Microtechnology- ASSEMIC (2003/07), 6th UE programme, Marie Curie Actions: Research Training Networks, proposal nº 504826:. Partners: U. Viena (AT) coordenador; FSRM (CH); ARC (DE); IMT (RO); WUT (PL); UNINOVA (PT); AmiR (DE); Robotiker (SE); FORTH-HELLAS (GR); Medplant Genetics + Proteomica (SE); RAL-CCLRC (UK); Fraunhofer Institut für Lasertechnik – ILT (DE); SSSA (IT); Nascatec (DE).
6. "Materials Engineering and Physics of Quasimorphous Silicon Thin Films for its Application in Large Area Electronics". FLAD (projecto 85/02, 2002/2005). Parceiros CEMOP/ UNINOVA, CENIMAT (Portugal), Physics Dept of Syracuse University.
7. "European Network on Amorphous-Silicon Device Technology-ASINET". Brite-EuRam, GTC1-2000-28040 (2000/2005). Parceiros: CIEMAT (ES), coordenador; ENEA (IT); U. Cranfield (UK); Pilkington (UK); U. Barcelona (ES); CNRS/PICM (FR); Akzo Nobel b.v./ANC (NL); CNR (IT); U. Stuttgart (DE); IST (PT); LAMEL (IT); U. Torino (IT); U. Patras (GR); U. Delft/TUE (NL); UNINOVA/CEMOP (PT); U. Cambridge (UK); U. Utrecht (NL); U. Roma (IT); TNO (NL).
8. "Development of new production techniques for highly efficient polymorphous solar cells- H-Alpha Solar" Brite-EuRam, NNE5-1999-00133 (2000/2004). Parceiros: U. Eindhoven/TUE, coordenador (NL); U. Orleans/GREMI (FR); CNRS/PICM (FR); UNINOVA/CEMOP (PT); ATECNIC/PORTSOL (PT); Balzers A. G./BPS (LI); Akzo Nobel Chemical b.v./ANC (NL).

Awards Received

- E. FORTUNATO, R. MARTINS, honor prize given by ANIMEE (Portuguese electric and electronic association) in ENDIEL'97, for the work: "New linear sensor for measurements, based on the a-Si:H technology".
- Prize of Stimulus to the Scientific Excellency given by the Portuguese Government, November 2004, to have more than 100 papers at ISI with more than 500 citations.

Member of Scientific Committees, since 2003

- Member of the International Advisory Committee of ICANS22, to be held in Denver (USA), in August 2007.
- Member of the International Scientific Committee of the 1st International Symposium on Transparent Conducting Oxides, Crete Greece, 23-25 de October 2006, to be organized by IESL – FORTH.
- Member of the "Board of Delegates" of the European Materials Research Society, since 2002.
- Member of the Scientific Nobel Prize Laureate Physics Committee, in 2002.

Organization of Conferences, workshops, Schools and Invited speaker, from 2003 up to 2007.

- ✓ Responsible for the Master Course in Microelectronics and Nanotechnologies Engineering, launched by UNL (Portugal) in 2006/2007.
- ✓ Organizer of the General Assembly of the Initiative for science in Europe, ISE, held in Lisbon, 15-16 January 2007 at UNL Rectory, where it was discussed the future European platform reklated to life science and elected the new ISE president, Prof. Dr. Federico Mayor, ex general director of UNESCO.
- ✓ Chairman of the all European Materials Research Society (spring meeting) Conference and International Conference on Electronic Materials (ICEM), May/June 2006
- ✓ Chairman of the 21 ICANS, "International Conference on Amorphous and Microcrystalline Semiconductors", Lisboa, Portugal, September 2005.
- ✓ Chairman of the all European Materials Research Society (spring meeting) Conference in 2005
- ✓ Chairmen of Symposium C, "Materiais Supramoleculares e Dispositivos", da SBPMat (Iguaçu, Brasil, October 2004) together with Professors Giovanni Marletta, U. Catania (Itália) and Osvaldo Novais Oliveira Jr. IF/USP São Carlos (Brasil)".
- ✓ Organizer and monitor of the Short Course in "Fundamentals and Applications of Nanotechnologies", together with Professors M. Duart (U. Madrid) and J. Morant (U. Barcelona), held in Strasbourg during the EMRS spring meeting, 2004.
- ✓ Local chairman of Energex 2004 (World Energy Forum), Lisbon, May 2004.
- ✓ Chairman of the 11st Portuguese Materials Research Society Conference, 2nd International Materials Symposium, Lisboa, Portugal, April 2003.

- ✓ **National Invited Talks in the last 3 years as the main author:**

1. "Energia Fotovoltaica: Situação em Portugal e na Europa: Aspectos técnicos da sua produção", 1-7 April 2004, IMES, Portugal;
2. "Nanotecnologias: uma aposta na industria do futuro", Jornadas de" a Engenharia em Portugal, que Futuro? Instituto Politécnico de Portalegre", 7-8 March 2005;
3. : "Energia Fotovoltaica: Situação em Portugal e na Europa: Aspectos técnicos da sua produção", Moura e o Ambiente, 28 -29 April 2005;
4. "As Energias Renováveis: Impactos Sociais e Ambientais";, II Jornadas de Engª Electrotécnica, Energia sem Limites, Instituto Politécnico de Tomar, 8-10 de March 2006;
5. "A Energia Fotovoltaica, o desenvolvimento social e os impactes ambientais", BEST (Board of European Students of Technology) organization, "E quando o Petróleo Acabar?- Energia; Inovação; Novas Soluções"- 10 May 2006, Caparica, Portugal;
6. "Aprender o que são nanotecnologias e como funcionam dispositivos electrónicos à nano-escala," 24 June 2006, Pavilhão do Conhecimento, Lisboa, in the frame of the set of seminars promoted by UE concerning nanotechnologies dialogues.

International Invited Speaker in the last 3 years:

1. "Novel oxide Nanostructures for optoelectronic applications such as solar cells". "II International Symposium on Advanced Materials and Nanostructures", São Carlos, Brasil, de 3-4 de May 2007, organized by Prof. Dr. Osvaldo Oliveira Junior.
2. "Electrical transport in Amorphous Oxides", "International Symposium on Transparent Amorphous Oxide Semiconductor 2007 (TAOS 2007)", Tokyo Institute of Technology, Japan, 20-23 de May 2007, organized by Prof. Dr. H. Osono.
3. "Gap engineering of nanocrystalline silicon and nano-oxides for photovoltaic applications", at Japanese National Institute in Advanced Industrial Science and Technology-AIST, Tsukuba-Japan, 21 November 2006.

4. “Transparent conductive ZnO thin films deposited on polymer substrates by rf magnetron sputtering at room temperature” 2nd Plastic Electronics Conference and showcase: 24-25 October 2006, Sheraton Hotel, Frankfurt, Germany.
5. “Transport in Single and Multicomponent n-Type Oxide Semiconductors: from Insulators to Active Semiconductors"; International Conference on Optical and Optoelectronic Properties of Materials and Applications, sponsored by Springer”, ICOOPMA-2006, Darwin, Australia, 15-22 July 2006.
6. “Amorphous oxides and their applications in novel Optoelectronic devices”, 9 July 2006, Hewlett Packard, Dublin, Ireland.
7. Zinc oxide: a new “elastronic” material, EMRS, Symposium K, Nice, France, June 2006.
8. “Amorphous/Nanostructured silicon: from material to sensors application”, Open Academic Seminar of ASSEMIC network (Advanced Handling and Assembly in Microtechnology), 8 -9 de May 2006, Caparica, Portugal.
9. Seminar SAIT - SAMSUNG “Transport properties of Electronic Multicomponent Oxides”, Suwon, Korea, 11 July 2005.
10. EMRS/ fall meeting, Warsaw, 5-10 September, 2004, with the talk: “3-D linear array position sensors: performances and applications”.
11. ZnO as UV and Ozone sensors”, 27 July 2004; Neufchatel University, Switzerland.
12. Moderator of the round table about Nanotechnologies in the IV Meeting of the International Forum of Portuguese researchers held in Coimbra, 12-14 July 2004.

Patents

- L. GUIMARÃEs and R. MARTINS, patent nº 75159/82-P, “Production of semiconductors films and alloys by two consecutive decomposition and deposition chamber system” (“after glow” PECVD system).
- E. FORTUNATO, R. MARTINS and L. Ferreira, Position Linear sensors based in amorphous silicon thin films, in **Boletim da Propriedade Industrial**, nº 12/95, 5113 (1996), process nº 101576/97.
- E. FORTUNATO, R. MARTINS, P. Baptista, Patent nº 103561-PT, September 2006, pending. "Sistema e processo para detecção e identificação de sequências específicas de ácidos nucleicos com base em diferenças colorimétricas, recorrendo a sondas de nanopartículas de metal, com integração de sensores ópticos, e respectivas utilizações".
- It has pending for analysis a set of 5 more patents related to the use of oxides in novel optoelectronic devices.

Publications

More than 700 scientific publications with more than 1000 citations in the areas of Semiconductors, Optoelectronics, Energy Conversion and Thin Film technologies and their applications. The relevant publications in the last 3 years are:

Editing of books or proceedings

1) R. Martins, V. Chu, E. Fortunato, J. Conde, I. Ferreira, “Proceedings of the Twenty First International Conference on Amorphous and Nanocrystalline Semiconductors Science and Technology”, Elsevier, 2006.

2) Book of Proceedings of the 10th International Conference of the International Energy Forum, May 2004, ISBN 972-8893-000-0, L. Guimarães and R. Martins (2004).

3) II Advance Materials Science Forum, R. Martins, E. Fortunato, I. Ferreira e C. Dias, Trans Tech Publications, (2004).

Book Chapters

1) E. Fortunato, I. Ferreira, R. Martins, "Zinc oxide Thin Films Applied to UV light and Ozone Sensors", in Encyclopedia of Sensors, in American Scientific publishers, edited by C.A. Grimes, E.C. Dickey and M.V. Pishko and forwardeed by Professor Rudolph A. Marcus, nobel prize laureate in Chemistry. To be published in 2005, Vol.10 (2006), pp. 501-515.

2) E. Fortunato, L. Pereira, H. Águas, I. Ferreira, R. Martins. "Flexible a-Si:H Position Sensitive Detectors", in special issue on Flexible, Electronics Technology, edited by Arokia Nathan and Babu Chalama, Proc. IEEE, 93 (7), (2005) pp. 1281-1286.

3) E. Fortunato, P. Barquinha, A. Pimentel, A. Goncalves, A. Marques, L. Pereira, R. Martins. "Zinc Oxide Thin Film Transistors". In NATO ARW on Zinc Oxide - A Material for Micro and Optoelectronic Applications, edited by N. Nickel and E. Terukov, Springer publishers (2005), chpter 20, pp. 225-238.

4) R. Martins, I. Ferreira, E. Fortunato e L. Guimarães. "Materiais e Dispositivos Fotovoltaicos". "Os Materiais dos Anos 2000", edts P.J. Ferreira e M.A. Fortes, IST press pp. 305-316 (2003).

Journals

Jinzhong Wang, Vincent Sallet, Gaëlle Amiri, Jean-François Rommelluere, Alain Lusson, John E Lewis, Pierre Galtier, E. Fortunato, **R. Martins** and Ouri Gorochov "Influence of the self-buffer layer on ZnO film grown by atmospheric metal organic chemical vapor deposition". Thin Solid Films 515 (4) (2006), pp. 1527-1531.

R. Martins, P. Barquinha, I. Ferreira, L. Pereira, G. Gonçalves, E. Fortunato, . "Role of order and disorder on the electronic performances of oxide semiconductors thin film transistors" Journ. Applied Physics (2007) in press.

R. Martins, P. Baptista, L. Raniero, G. Doria, L. Silva, R. Franco, E. Fortunato, . "Amorphous/nanocrystalline silicon biosensor for the specific identification of unamplified nucleic acid sequences using gold nanoparticle probes" Appl. Phys. Letters 90 (2007) pp. 02903-02905.

E. Fortunato, P. Barquinha, A. Pimentel, L. Pereira, G. Gonçalves and **R. Martins**. "Amorphous IZO TTFTs with saturation mobilities exceeding 100 $cm^2V^{-1}s^{-1}$." phys. stat. sol. (RRL) 1 Nº1 (2007) R34-R36.

E. Fortunato, I. Ferreira, **R. Martins**, "Zinc oxide Thin Films Applied to UV light and Ozone Sensors", in Encyclopedia of Sensors, in American Scientific publishers, edited by C.A. Grimes, E.C. Dickey and M.V. Pishko and forwarded by Professor Rudolph A. Marcus, nobel prize laureate in Chemistry. Vol.10 (2006), pp. 501-515.

JI Martins, SC Costa, M. Bazzaoui, G. Goncalves, E. Fortunato, **R. Martins**. "Electrodeposition of polypyrrole on aluminium in aqueous tartaric solution". Electrochimica Acta Vol. 51 (26) (2006) pp. 5802-5810.

L. Pereira, H. Águas, E. Fortunato and **R. Martins.**" Nanostructure characterization of high k materials by spectroscopic ellipsometry". Applied surface Science, Vol. 253 (1) (2006), pp. 39-343.

S. Zhang, X. Liao, L. Raniero, E. Fortunato, Y. Xu, G. Kong, H. Águas, I. Ferreira and **R. Martins**. "Silicon thin films prepared in the transition region and their use in solar cells". Solar Energy Materials and solar cells, Vol. 90 (18-19) (2006) pp. 3001-3008.

N. Martins, P. Canhola, M. Quintela, I. Ferreira, L. Raniero, E. Fortunato and **R. Martins.** "Performances of an in-line PECVD system used to produce amorphous and nanocrystalline silicon solar cells". Thin Solid Films, Vol. 511-512 (2006), pp. 238-242.

L. Pereira, R.M.S. Martins, N. Schell, E. Fortunato and **R. Martins.**" Nickel-assisted metal-induced crystallization of silicon: Effect of native silicon oxide layer". Thin Solid Films, Vol. 511-512 (2006), pp. 275-279.

L. Raniero, I. Ferreira, A. Pimentel, A. Gonçalves, P. Canhola, E. Fortunato and **R. Martins.** "Role of hydrogen plasma on electrical and optical properties of ZGO, ITO and IZO transparent and conductive coatings". Thin Solid Films, Vol. 511-512 (2006), pp. 295-298.

I. Ferreira, L. Raniero, E. Fortunato and **R. Martins.**"Electrical properties of amorphous and nanocrystalline hydrogenated silicon films obtained by impedance spectroscopy". Thin Solid Films, Vol. 511-512 (2006), pp. 390-393.

L. Pereira, H. Águas, M. Beckers, R.M.S. Martins, E. Fortunato and **R. Martins** "Spectroscopic ellipsometry study of nickel induced crystallization of a-Si". Journal of Non-Crystalline Solids, Vol.352, issue1-9 (2006), pp. 1204-1209.

I. Ferreira, E. Fortunato, P. Vilarinho, A.S. Viana, A.R. Ramos, E. Alves and **R. Martins** "Hydrogenated silicon carbon nitride films obtained by HWCVD, PA-HWCVD and PECVD techniques". Journal of Non-Crystalline Solids, Vol.352, issue1-9 (2006), pp. 1361-1366.

S. Zhang, L. Pereira, Z. Hu, L. Ranieiro, E. Fortonato, I. Ferreira and **R. Martins** "Characterization of nanocrystalline silicon carbide films". Journal of Non-Crystalline Solids, Vol.352, issue1-9 (2006), pp. 1410-1415.

G. Gonçalves, A. Pimentel, E. Fortunato, **R. Martins**, E.L. Queiroz, R.F. Bianchi and R.M. Faria "UV and ozone influence on the conductivity of ZnO thin films". Journal of Non-Crystalline Solids, Vol.352, issue1-9 (2006), pp. 1444-1447.

A. Pimentel, A. Gonc¸alves, A. Marques, **R. Martins** and E. Fortunato "Role of the thickness on the electrical and optical performances of undoped polycrystalline zinc oxide films used as UV detectors". Journal of Non-Crystalline Solids, Vol.352, issue1-9 (2006), pp. 1448-1452.

R. Martins, P. Almeida, P. Barquinha, L. Pereira, A. Pimentel, I. Ferreira and E. Fortunato "Electron transport and optical characteristics in amophous indium zinc oxide films". Journal of Non-Crystalline Solids, Vol.352, issue1-9 (2006), pp. 1471-1474.

L. Pereira, L. Raniero, P. Barquinha, E. Fortunato and **R. Martins** "Impedance study of the electrical properties of poly-Si thin film transistors". Journal of Non-Crystalline Solids, Vol.352, issue1-9 (2006), pp. 1737-1740.

P. Barquinha, A. Pimentel, A. Marques, L. Pereira, **R. Martins** and E. Fortunato "Influence of the semiconductor thickness on the electrical properties of transparent TFTs based on indium zinc oxide". Journal of Non-Crystalline Solids, Vol.352, issue1-9 (2006), pp. 1749-1752.

P. Barquinha, A. Pimentel, A. Marques, L. Pereira, **R. Martins** and E. Fortunato "Effect of UV and visible light radiation on the electrical performances of transparent TFTs based on amorphous indium zinc oxide". Journal of Non-Crystalline Solids, Vol.352, issue1-9 (2006), pp. 1756-1760.

H. Águas, L. Pereira, L. Raniero, D. Costa, E. Fortunato and **R. Martins** "Investigation of a-Si:H 1D MIS position sensitive detectors for application in 3D sensors". Journal of Non-Crystalline Solids, Vol.352, issue1-9 (2006), pp. 1787-1791.

J. Contreras, C. Baptista, I. Ferreira, D. Costa, S. Pereira, H. Águas, E. Fortunato, **R. Martins** "Amorphous silicon position sensitive detectors applied to micropositioning". Journal of Non-Crystalline Solids, Vol.352, issue1-9 (2006), pp. 1792-1796**.**

M. Fernandes, M. Vieira and **R. Martins** "The laser scanned photodiode: Theoretical and electrical models of the image sensor". Journal of Non-Crystalline Solids, Vol.352, issue1-9 (2006), pp. 1801-1804.

L. Raniero, E. Fortunato, I. Ferreira and **R. Martins** "Study of nanostructured/amorphous silicon solar cell by impedance spectroscopy technique". Journal of Non-Crystalline Solids, Vol.352, issue1-9 (2006), pp. 1880-1883.

Z. Hu, X. Liao, H. Diao, Y. Cai, S. Zhang, E. Fortunato and **R. Martins** "Hydrogenated p-type nanocrystalline silicon in amorphous silicon solar cells". Journal of Non-Crystalline Solids, Vol.352, issue1-9 (2006), pp. 1900-1903.

L. Raniero, I. Ferreira, L. Pereira, H. Águas, E. Fortunato and **R. Martins** "Study of nanostructured silicon by hydrogen evolution and its application in p–i–n solar cells". Journal of Non-Crystalline Solids, Vol.352, issue1-9 (2006), pp. 1945-1948.

Y. Xu, Z. Hu, H. Diao, Y. Cai, S. Zhang, X. Zeng, H. Hao, X. Liao, E. Fortunato and **R. Martins** "Heterojunction solar cells with n-type nanocrystalline silicon emitters on p-type c-Si wafers". Journal of Non-Crystalline Solids, Vol.352, issue1-9 (2006), pp. 1972-1975.

R. Martins, V. Chu, E. Fortunato, JP Conde, I. Ferreira**.**" Proceedings of the Twenty First International Conference on Amorphous and Nanocrystalline Semiconductors - Science and Technology - Calouste Gulbenkian Foundation, Lisbon, Portugal - September 4-9, 2005 Preface". Journal of non-Crystalline Solids, Vol. 352 (9-20) (2006), pp. VII.

Jinzhong Wang, Vincent Sallet, Gaëlle Amiri, Jean-François Rommelluere, Alain Lusson, E. Rzepka, John E Lewis, Pierre Galtier, Elvira Fortunato, **Rodrigo Martins** and Ouri Gorochov, "Influence of the ex-situ and in-situ annealed self-buffer layer on ZnO film". Phys. Stat. Sol. (c) 3, No. 4, (2006) pp. 1010–1013.

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- referee in a wide range of journals, such as Nature, Nature Nanotechnology, Advanced Functional Materials, Advanced Materials, Journal of Applied Physics, Physica status solidi, Sensors and Actuators, Journal of non-Crystalline Solids, Thin Solid Films, Philosophical Magazine.
- Scientific referee of the electronics materials and nanotechnologies evaluation panels of Italy and Spain, since 2004.

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