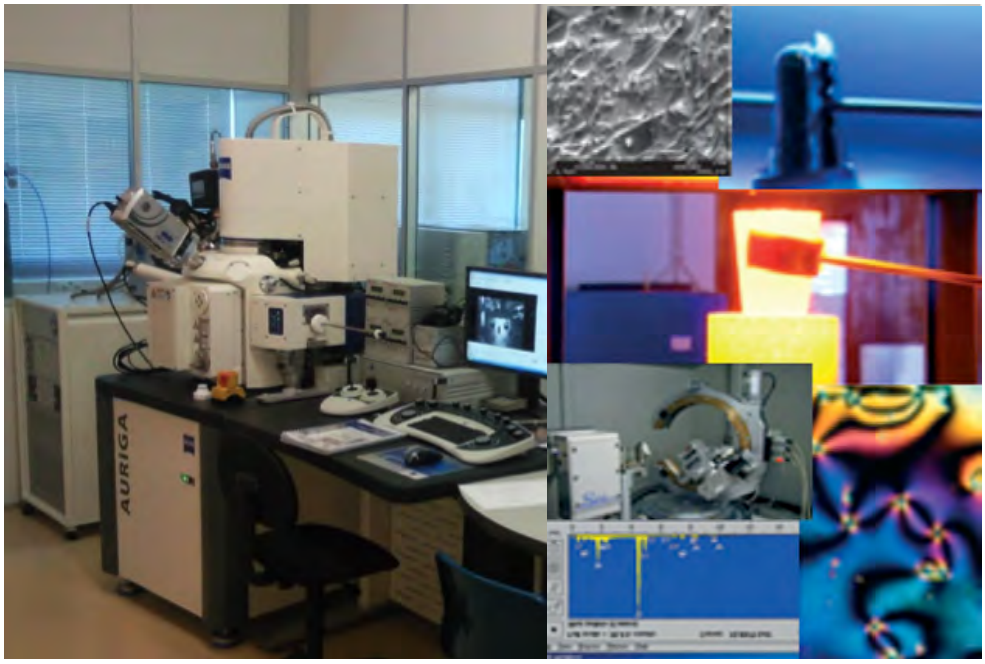
PDCEM

Programa Doutoral em Ciência e Engenharia de Materiais



Materials Science and Engineering Doctoral Program

Coordinated by the Department of Materials Science of FCT-UNL in conjunction with the Materials Research Centre from i3N

Departamento de Ciência dos Materiais
Faculdade de Ciências e Tecnologia
Universidade Nova de Lisboa

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PDCEM

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Welcome Message from the President of the Department of Materials Science

As the head of Materials Science Department I am proud to welcome you to the wonderful world of research and innovation that we cultivate in our department and research units connected to it, as are the cases of CENIMAT/I3N and CEMOP/Uninova, going from Advanced Materials to Nanosciences and Nanotechnologies, where excellence is our target! I am pretty sure that your adrenaline will be always in the frontiers of your motivation, as our researchers are fully open to exploit your knowledge and imagination, to push creativity and innovation to the extremes. Those are the challenges that you have to overcome by joining such a motivated and enthusiastic team of researchers, always focused to be in the forefront of R&D in the fields where they work!

Welcome to our family!

Rodrigo Martins

Full Professor at the Department of Materials Science of FCT-UNL

Director of the Department of Materials Science

Short Bio of the Program Coordinator

Born June 1, 1959, in Almada.

Degree in Chemical Engineering (IST/UTL) 1983, Ph.D. in Materials Science (FCT-UNL) 1994, Habilitation in Engineering Materials (FCT-UNL) 2006.

Responsible for one Research Project FCT, Co-Head of another one and responsible for the Portuguese part of a bilateral project, Portugal-India. Team member of several FCT projects (8), a Brite Euram project, that she co-headed, and three networks (EU-TMR and EU-MCH).

Supervisor and co-supervisor of 5 Ph.D. thesis and 11 Master dissertations. Author of 46 publications referenced in WoS, and of 73 communications in international congresses, of which 44 oral ones.

Associate Editor of Physica Scripta a journal of the Swedish Academy of Sciences, Editor of e-rheo.iba, the on-line journal of the Portuguese, Mexican and Brazilian Societies of Rheology and Spanish Group of Rheology. Regular referee of several international journals, including the Polymer Engineering and Science and the Journal of Membrane Science, among others.

Member of the Organizing Committee of 5 International Conferences, of which 1 as Chairperson.

In FCT / UNL she held various management positions: Executive Committee of the DCM (for different periods in the 1990s), Deputy Director of the Center for Materials Research (Cenimat), 1995-1997 and 1998-2009, Member of the Assembly of Representatives of FCT-UNL, (1990-2003) Member of the Board of FCT-UNL, 2001, Head of the scientific section of Polymeric and Mesomorphic Materials of DCM, 2001-present, Secretary of the Scientific Council of the FCT-UNL, 2006-2009.

Coordinator of the Ph.D. program in Materials Science and Engineering and the coordinator from FCT-UNL of the FCT Ph.D. Program in Advanced Materials and Processing, a Ph.D. program proposed by UNL in association with other six universities, from which she was the general coordinator of the first edition.

Founding member of the Portuguese Society of Rheology, from which she is the President since 2010.

ANI (National Agency for Innovation) expert in Materials and Mechanics panels.

Contact information

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SCOPUS: http://www.scopus.com/authid/detail.url?authorId=6602662211

Google Scholar: http://scholar.google.pt/citations?user=n2V7trsAAAAJ&hl=pt-PT&oi=ao

Welcome Message from the Doctoral Program Coordinator

Dear Potential Candidate to the Doctoral Program,

On behalf of the Department of Materials Science I want to give you a warm welcome and tell you that we are proud to have the students we have! The training you have chosen is of utmost importance worldwide, being the creation, discovery and design of new materials the basis to the rapid evolution of the technology necessary to modern times.

Your training will be based on three pillars: excellence in education and research; excellent laboratory resources and extraordinary teachers and supervisors, open to discuss your ideas and to support you in any problems that arise, whether scientific or in other jurisdiction.

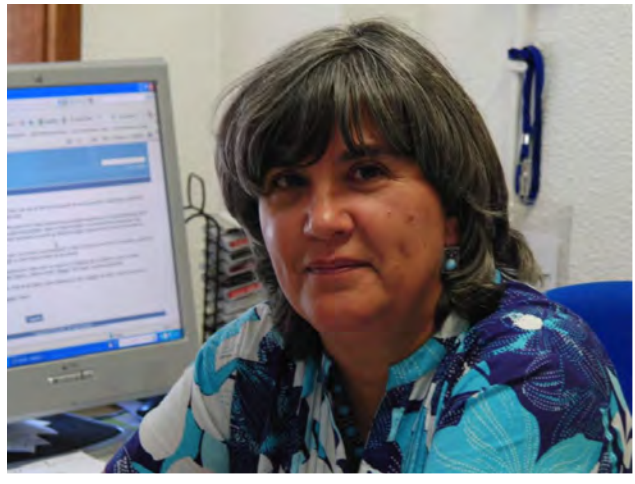
I am sure that, by the end of your training, you will feel enriched and capable of facing any problem in your area of expertise.

For any problems during your training you may always count on me.

Best wishes,

Maria Teresa Cidade

Assistant Professor with Habilitation at the Department of Materials Science of FCT-UNL



FACULDADE DE
CIÊNCIAS E TECNOLOGIA
UNIVERSIDADE NOVA DE LISBOA

FCT-UNL, the Coordinating Institution

The Faculty of Sciences and Technology from New University of Lisbon (FCT-UNL) was founded in 1977 and is located in a university campus located at Monte de Caparica, south of Lisbon.

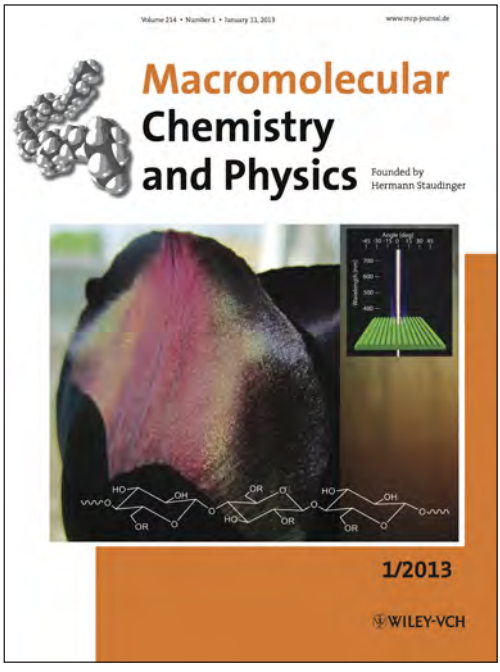
FCT-UNL is one of the most prestigious public Portuguese engineering and science schools, engaged in extensive research activity developed in 18 research centres recognized by Fundação para a Ciência e a Tecnologia and involving 1 600 Ph.D. and Masters' students of the total enrolment nearly 8 800.

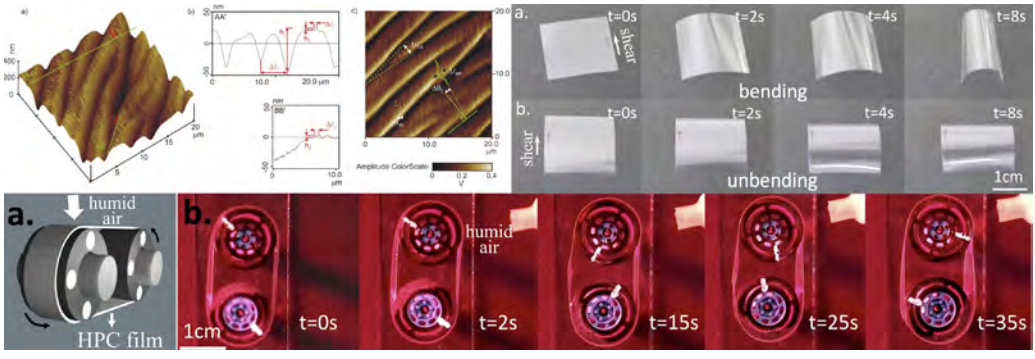
Its solid scientific production results in the publication of a large number of articles in leading academic journals, giving FCT-UNL a broad recognition at national and international university level.

FCT-UNL is also widely involved with the general community providing its expertises and skills to help Governmental and Local Institutions as well as enterprises in studying and solving many different questions and problems related to in house areas of knowledge.

FCT-UNL partners with foreign universities such as the MIT, CMU and UTA offer some of its advanced international study programs.

Images from papers published by CENIMAT members selected for the respective journal covers. Below: a moisture-driven cellulosic motor.



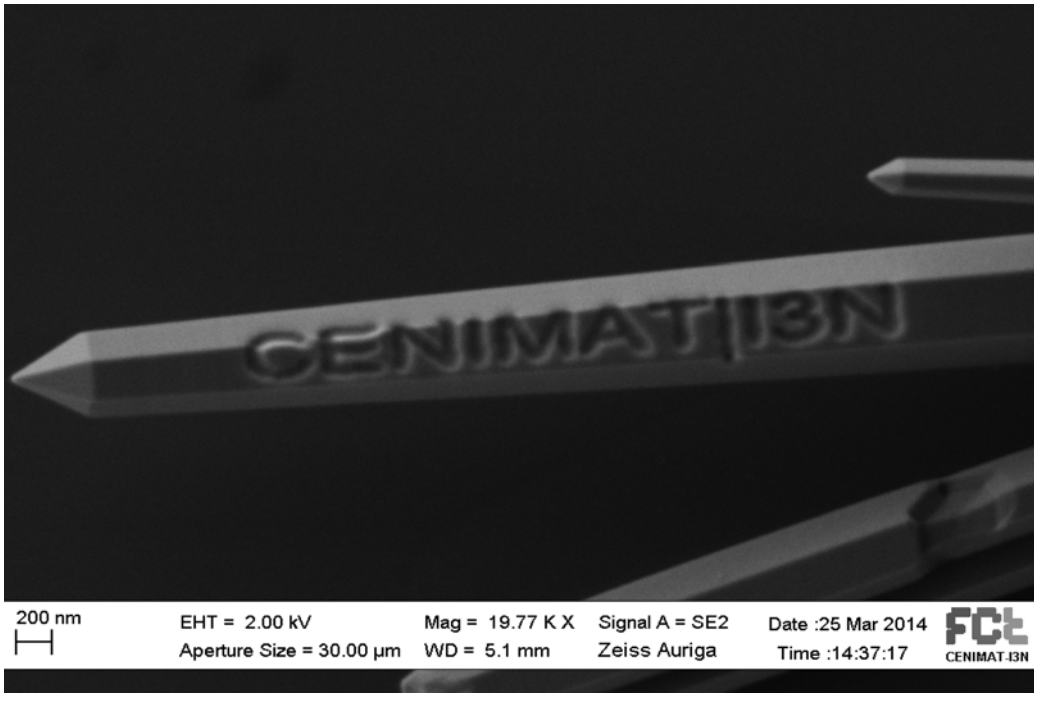


CENIMAT | i3N the Research Centre Supporting the Doctoral Program

CENIMAT is a centre of excellence devoted to R&D activities within the field of materials science & engineering, which includes semiconductors, polymers, liquid crystals, thin film coatings, dielectrics, metals, ceramics and composite materials, covering all the scientific & technological aspects of processing and characterization related to nanotechnologies and microsystems. Since 2006 it integrates the National Associate Laboratory, the Institute for Nanotechnologies, Nanomaterials and Nanosciences, i3N.

CENIMAT has a strong experience in the development of novel multifunctional materials with an emphasis in transparent electronics, paper electronics and biofunctional materials. For more than 20 years, CENIMAT | i3N is participating in several National, European and International projects in the field of optoelectronic sensors, biosensors, microfluidics, solar cells, thin film transistors, technical ceramics, shape memory alloys, cellulosic based mechanical and optical sensors, liquid crystalline displays and biomaterials for medical applications, among others.

Nanofabrication on a ZnO nanorod.



CENIMAT hosts two clean rooms fully equipped with all the facilities for microelectronic processing and thin film technologies as well as the new Nanofabrication Laboratory, the first of its kind installed in a Portuguese University. It hosts also laboratories of NMR, X Ray diffraction and Fluorescence, Optic and Scan Electron Microscopy, Mechanical, Rheological, Thermal, Dielectric, Electric and Optical Characterization.

CENIMAT supports service to industry by providing the facilities and the necessary expertise to carry out research, training and development programs in the above mentioned fields.

Green Project Awards Portugal, Honorable Mention 2011.

CIÊNCIA

Eletrónica Transístores, memórias, baterias. Cientistas da Universidade Nova de Lisboa têm uma ambição: produzir toda a eletrónica em papel

Portugueses inventam baterias em papel

AS BATERIAS SÃO CARREGADAS PELO VAPOR DE ÁGUA EXISTENTE NO AR, DESDE QUE A HUMIDADE RELATIVA SEJA SUPERIOR A 40%

Biobaterias carregadas por suor

Ecrãs de papel, projeto europeu

OS NÚMEROS DA INOVAÇÃO

3000

600

1000

0,8

VANTAGENS

Rodrigo Martins professor da Universidade Nova de Lisboa

"Já alcançámos a capacidade dos telemóveis"

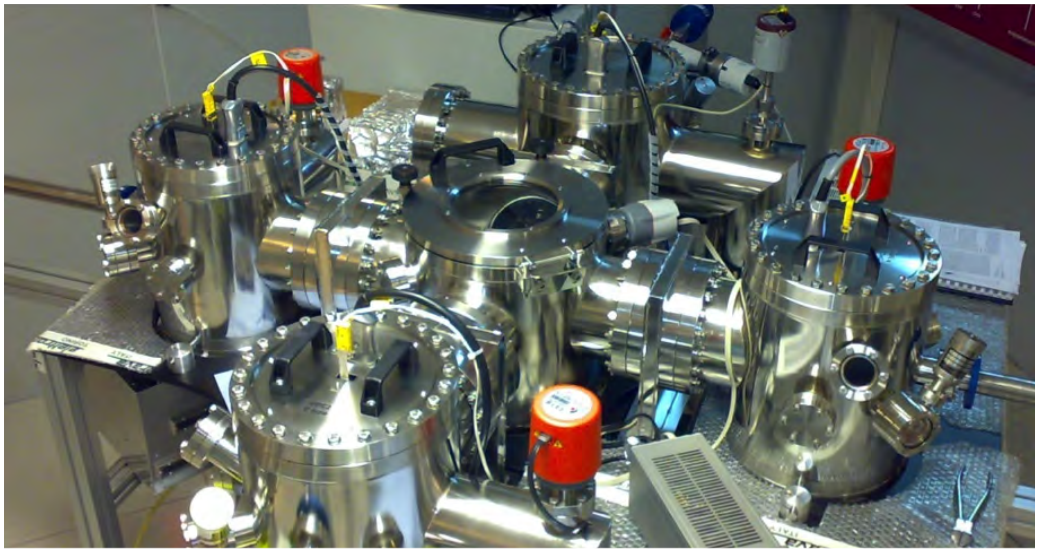
APLICAÇÕES PARA TODOS OS GOSTOS

"Aquilo que já conhecemos da eletrónica descartável, flexível e em papel, é mais do que suficiente para entrarmos no mercado mundial"

"Em vez de termos o e-Paper e os e-Books de que toda a gente fala, passamos a ter o Paper-e, que é a nossa marca, portuguesa, já registada em 14 países, o último dos quais o Japão"

What is Materials Science and Engineering?

Materials Science and Engineering is a cross cutting multisectorial enabler, relevant in difference scientific and technical domains, thanks to its multidisciplinary characteristics, grounded by the fundamentals of basic sciences and engineering needed to understand the behaviour of structural and functional materials, their developments and applications. It deals with the discovery and design of new materials and improvement of known ones; the use of advanced materials in key enabling technologies, such as transports, energy, aerospace, health, packaging, security, among others. Though it is a relatively new scientific field that involves studying materials through the materials paradigm (synthesis, structure, properties and performance), its intellectual origins reach back to fields like metallurgy, solid-state physics, chemistry, chemical engineering, mechanical engineering and electrical engineering. Materials science and technology must serve citizens, aiming to give them comfort and a better life. Nevertheless, this leads to an exponential use of materials and so, for keeping an eco-balance of our resources, the exploitation and use of materials at a nanoscale is mandatory. This is the so-called renaissance of materials, where R&D is crucial for our societal future challenges. No doubt that research in science and technology is highly relevant for the strategies of our future.



Plasma Enhanced Chemical Vapour Deposition cluster system used in the development of Silicon thin films for photovoltaics.

"Soft Matter", a journal of The Royal Society ("Where physics meets chemistry meets biology for fundamental soft matter research"). The cover of this issue has an image from a paper published by CENIMAT researchers.

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Soft Matter

www.rsc.org/softmatter

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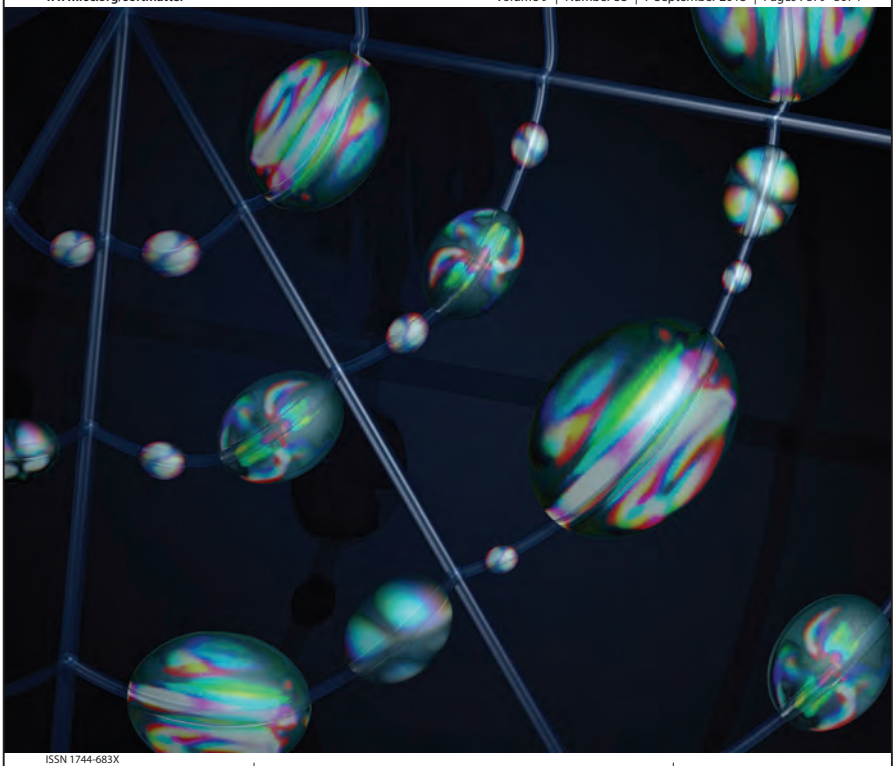

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RSC Publishing

PAPER

Slobodan Žumer, Maria H. Godinho *et al.*

Liquid crystal necklaces: cholesteric drops threaded by thin cellulose fibres

1744-683X(2013)9:33;1-2

Why Study Materials Science and Engineering

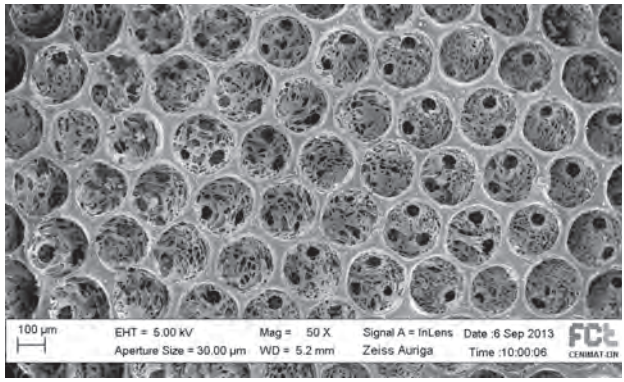
Modern times are very demanding in terms of technology. With 7 billion people in the word, the society based on traditional activities like agriculture or fishing is no longer possible. The present society cannot survive in a world without technology, however, its evolution, observed mainly in the XXth century, lead to environmental problems that the new generations have to solve. To do so, more efficient systems must be developed, allowing for lower utilization of resources of our planet. The discovery and design of new materials and improvement of known ones will be the basis for that desideratum.

In this context, the Ph.D. in Materials Science and Engineering aims to provide a solid background in the area of Materials Science and Engineering and its applications. It intends to make an approximation of knowledge areas of extreme relevance for the industry, based on knowledge and innovation. It is a multidisciplinary and interdisciplinary field of great value to all Engineering.

The Ph.D. in Materials Science and Engineering also aims to address the need to have doctors able to act in the areas of processing, functionality and design of new materials and their integration into systems and devices, as well as to promote the implementation of new techniques for materials processing, at the macro and nano scales, relevant to other engineering, namely Chemical, Mechanical, Metallurgical, Electronics, etc.

Biobattery developed at CENIMAT.

Liquid crystalline inverse opals for biomedical application



55 kW PV power station installed in FCT-UNL campus using a-Si:H solar cells technology implemented by CEMOP+CENIMAT and transferred to Solar Plus, 2013.

The Origins of the Ph.D. program on Materials Science and Engineering

Materials science evolved — starting from the 1960s — because it was recognized that to create, discover and design new materials was the key to the rapid evolution of technology necessary to modern times. Thus, materials science and engineering emerged at the intersection of various fields such as metallurgy, solid state physics, chemistry, chemical engineering, mechanical engineering and electrical engineering.

In 1981, the first graduation course in Materials Engineering (at that time Physics and Materials Engineering, that late, in 1991, was divided in two separate courses, Physics Engineering and Materials Engineering) in Portugal appeared at FCT-UNL to meet the needs of a comprehensive area of knowledge, being able to drive the creation of new products, or even new industries, or just support innovation in stable industries by making incremental improvements and problem solving.

Since the beginning, the graduation course was complemented with Ph.D. thesis aiming to the increase need of knowledge in a world in constant technological development. Prof. Rodrigo Martins, the actual president of the Materials Science Department, was the first Ph.D. student to get his degree in Materials

Convocatória N.º 465/P/08

Convoca-se V. Exa., Senhores Professores, para uma reunião do Plenário do Conselho Científico, no dia 16 de Abril, às 14 horas, no Grande Auditório.

Ordem de trabalhos

0. Aprovação da Acta da reunião anterior

1. Informações

2. Aprovação de Programas de Doutoramento

Doutoramento em Informática

Doutoramento em Matemática

Doutoramento em Estatística e Gestão do Risco

Doutoramento em Nanotecnologias e Nanociências

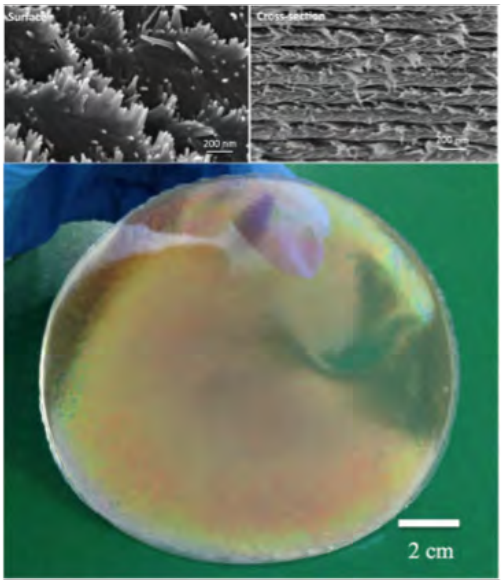
Doutoramento em Ciência e Engenharia dos Materiais

Science by Universidade Nova de Lisboa, back in 1982. His Ph.D., in Energy Conversion and Semiconductors, was obtained with a thesis entitled “a-Si:H Solar Cells Processing and Characterization”.

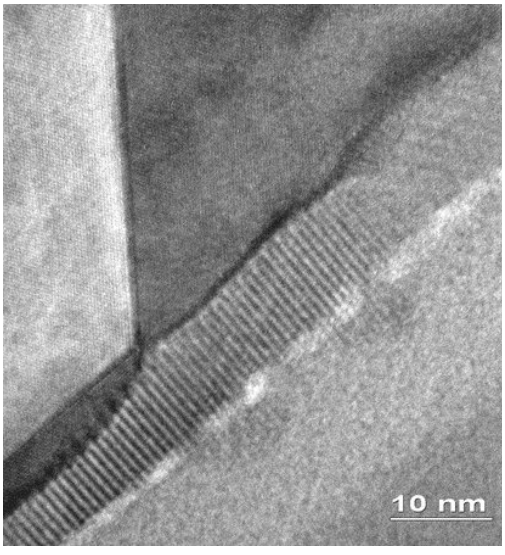
Taking advantage of the knowledge and experience of the members of the Materials Science Department, as well as its high quality infrastructures, a Ph.D. program, with a Ph.D. course associated, was established in 2009, having produced 20 Ph.D. holders so far.

Doctors in this field have an adequate education to pursuit research or R&D in public or private institutions, or in their own enterprises, in fields like: automobile, shipping, aerospace, metal mechanics, ceramics, polymers and molds, energy, electronics and computing, microelectronics and semiconductors industries, and biomedical systems.

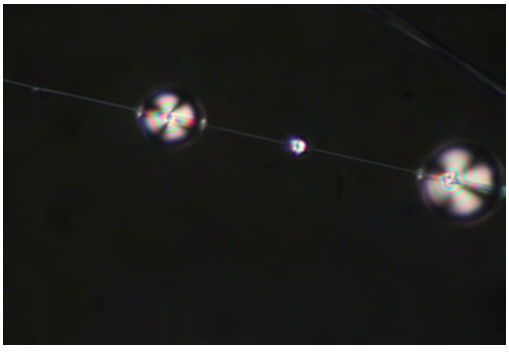
Cellulose nano rods.



NiTi Thin-Film_Si TEM.



Liquid crystal necklaces.



Curricular Structure

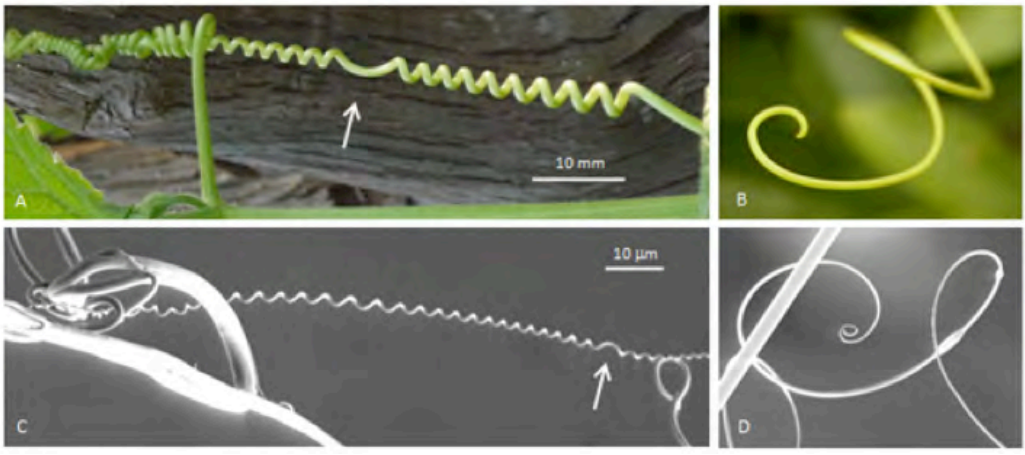
The Ph.D. in Materials Science and Engineering includes the branches of Materials Science and of Materials Engineering and is designed for holders of a Master's degree in engineering fields, although it is also possible to admit candidates with other backgrounds and curricula showing adequate scientific training.

Due to the diversity of backgrounds of the potential candidates, the program have a doctoral course of 30 ECTS (in a total of 240 ECTS) with a curricular organization that allows standardization of scientific expertise, management and citizenship of doctoral students through multiple offer of optional subjects, besides the sole mandatory subject Project Thesis (18 ECTS), which are selected by the doctoral student along with his/her scientific advisor and approval of the scientific program committee.

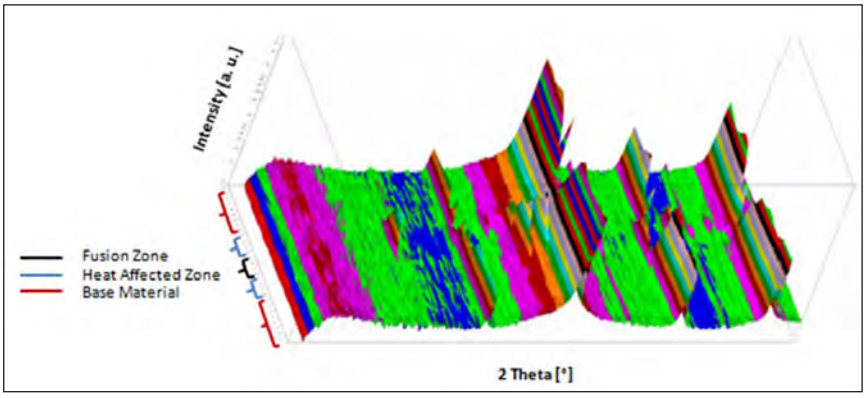
An important note that is very positive for the doctoral course is the recent (2012) established Doctoral School of UNL (New Doctoral School, http://www.unl.pt/en/doctoral-school/NOVA_Doctoral_School/pid=266/ppid=38/). The new Doctoral School aims to promote the quality, interdisciplinary and the internationalisation of doctoral programs throughout the University.

Without wanting to interfere in doctoral programs already in place in the various organic units, the Doctoral School intends to promote the development of good Academic Practices and offer additional training. The aim is thus to strengthen the personal and professional training of doctoral students and tutors, through training programmes of transversal skills.

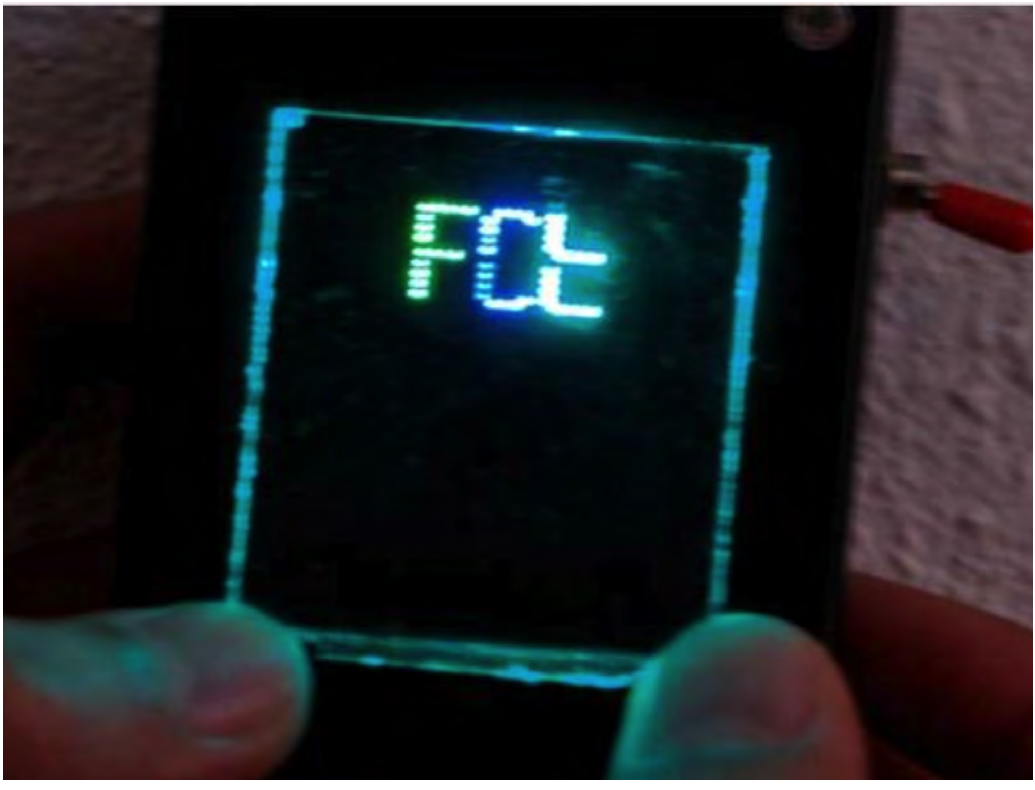
Helices and spirals in Passiflora edulis and in electrospun cellulosic microfibers.



3D plot XRD_Laser Weld NiTi.



An illustration of transparent electronics.



Admission Requirements

The Doctoral Program in Materials Science and Engineering is intended for candidates that satisfy the conditions laid down by national legislation, regulations of the FCT-UNL and UNL, and meet at least one of the conditions expressed in the following points:

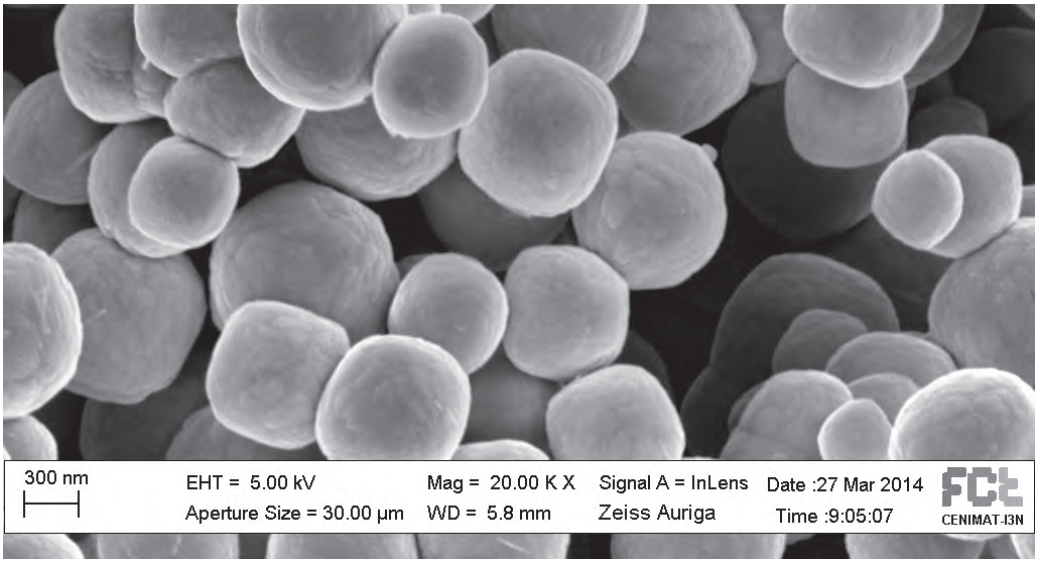
a) Possess a master's degree, or legal equivalent, or degree corresponding to a bachelor's degree with a number of ECTS equal or above 240, obtained in national or foreign institutions recognized as appropriate by the Scientific Program Committee. The candidate must have a final mark of fourteen (out of twenty) in these study cycles (or C in the ECTS scale);

b) Possess a graduate degree and be an holder of an academic or scientific curriculum especially relevant that is recognized by the FCT-UNL Scientific Council as attesting the capacity to carry out this cycle of studies;

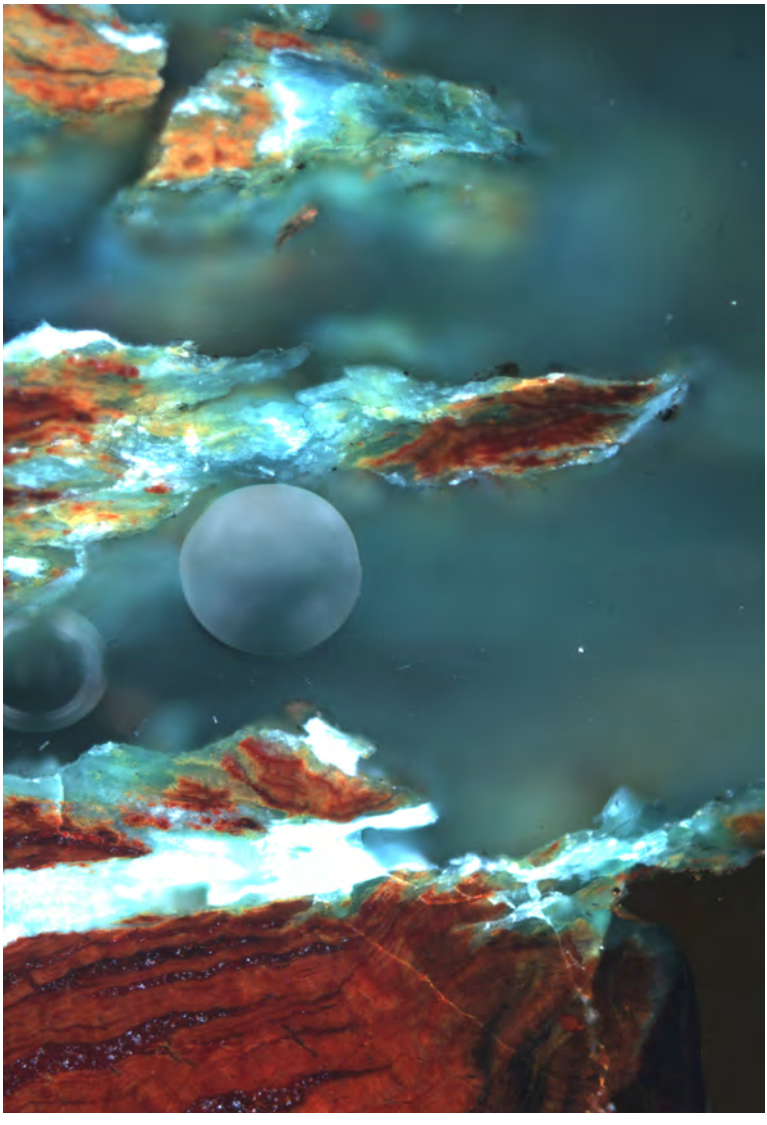
c) Be the holder of an academic, scientific or professional curriculum recognized by the FCT-UNL Scientific Council as attesting the capacity to carry out this cycle of studies.

The recognition referred to in b) and c) takes into account the opinions issued by two professors or postdoctoral researchers, considered experts in the scientific field of application and appointed by the corresponding doctoral program Scientific Committee. It does not gives its holder the equivalence to the degree of bachelor or master, or his recognition.

Copper oxide nanospheres.



Microstructure of a corroded bronze artefact attributed to Late Bronze Age (1250-700 BC) and found in the archaeological site of Castro de Baiões, Viseu (Portugal). Image obtained by optical microscopy with polarized light.



Application Procedure

Applications should contain:

a) Degree certificate listing the grades obtained;

b) Curriculum vitae and professional;

c) Declaration of Intent in which the candidate explains the reasons why he/she is interested in doing the Ph.D. program;

The candidates will be selected and ranked taking into account the following criteria:

a) Academic and scientific curriculum;

b) Professional resume;

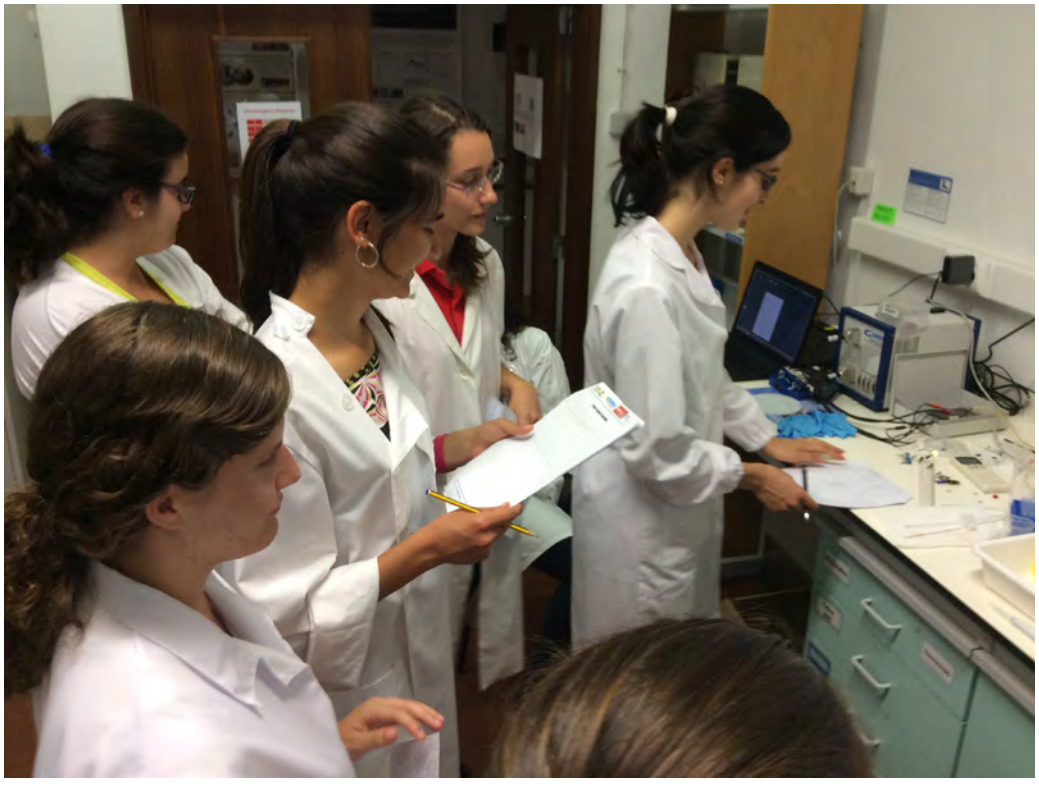
c) A text with a maximum of 5 pages showing the interest in deepening the research subject.

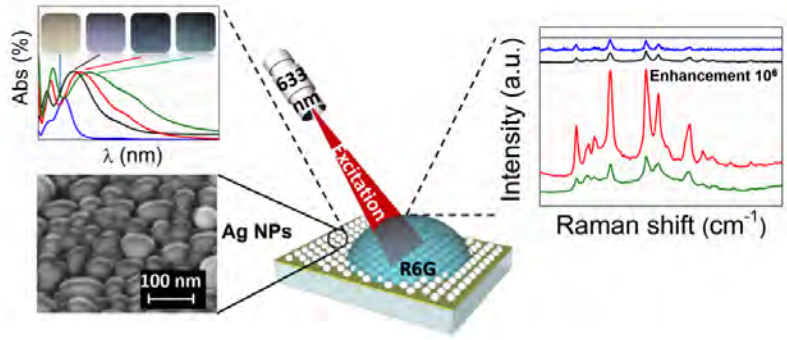
The application process may include an individual interview to clarify the intentions, motivations and interests of the candidate.

Glucose sensor developed at CENIMAT.

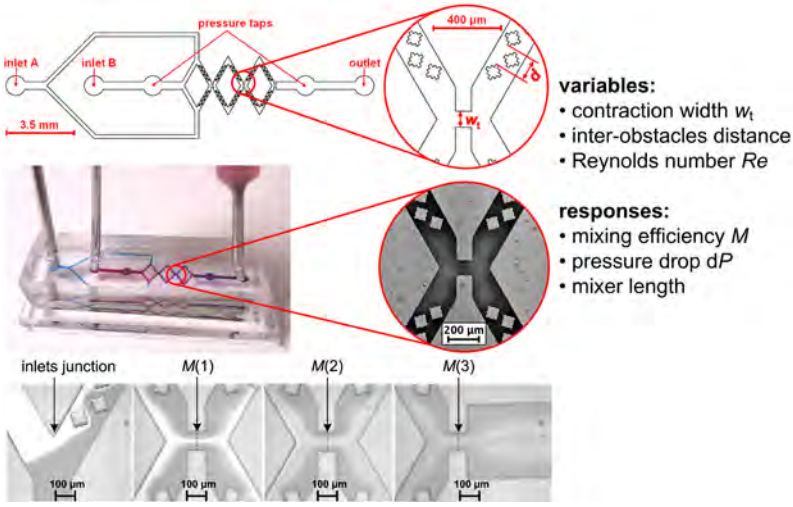
Career Prospects

After completing the program, Ph.D. holders may choose to proceed to an academic career or integrate the labour market in various industries (ceramics and glass, polymers and moulds, automotive and aerospace, engineering, electronics and computers, etc.) in R&D departments, to work in consulting or even creating their own technology-based company.





Plasmonic surfaces for SERS (Surface Enhanced Raman Spectroscopy).



PDMS micromixer development: schema, fabrication and characterisation.

Testimonials of Ph.D. Students

Ana Baptista, Ph.D. student (started 2011, waiting for public defense)

My academic career on chemistry and biotechnology has culminated with the doctoral program in Materials Science and Engineering in FCT-UNL. During my Ph.D. thesis I have been involved in a multidisciplinary project envisaging the development of a flexible cellulose-based bio-battery to power implantable medical devices. This is a relevant and inspiring topic of investigation that I have embraced during the last 4 years and that allowed me to grow as a researcher and to consolidate the knowledge and experience acquired throughout my academic background.

From my point of view, this program is a great opportunity to those who want to do scientific research integrating multiples areas of investigation either for the academy or industry.

Nuno Neves (started in 2009)

My name is Nuno Neves and I have a Master degree in Materials Engineering. I started the Doctoral Program in Science and Materials Engineering (PDCEMt) in 2009, and today, near to conclude my Ph.D., I can say that I made the right choice.

Besides their multidisciplinary, updated and strongly targeted to industry curricular plan, the PDCEM count with highly qualified and enthusiastic teachers dedicated to the formation of their doctoral students. Furthermore, the very well equipped labs, and the strong partnerships all over the world with several companies and research centers are an advantage, facilitating the research work development and opening doors to both research and industrial worlds during and after Ph.D. graduation.

Personally, I would like to emphasize the enormous hospitality, availability and flexibility of the entire research group and professors over the last few years. Even having developed large part of my Ph.D. research work at the company I work for, everyone always made me feel like "part of the materials family".

The knowledge acquired and the experiences lived over the last years, has helped me to grow both personally and professionally. Currently I find myself working as a product designer in the research and development department of a company dedicated to the synthesis of nanostructured materials – the same company were I started my Ph.D. project.

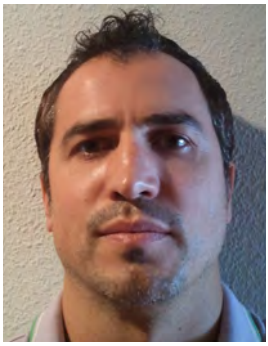
To conclude, I would like to wish good luck to all future Ph.D. students of the PDCEM. You should take advantage of the excellent technical and human resources available and never forget that there is only a limit during a Ph.D. in Materials Science – the limit of your imagination.

Claudia Ranito, Ph.D. Student (started 2012)

The doctoral program that I am doing at the moment has helped me discover new product opportunities in the medical device sector. The results obtained in the thesis have promising results and may be used by a medical device company, Medbone, to help take the results obtained into a new product to be commercialized.

I would like to take the opportunity to wish all future colleagues all the best for their challenging thesis and future endeavours.

Testimonials of Former Students



Javier Contreras (Ph.D. in 2014)

Overall I am satisfied with the doctoral program "Ciência e Engenharia de Materiais" now that it offered a mixture of various aspects of materials science, such as the fabrication, characterization and testing of arrays of position sensitive detectors and other Engineering activities such as the development of hardware/software based prototypes for those arrays of PSDs. Such a combination allowed me to learn and increase my skills in those areas, and in addition it allowed me to foster my own initiatives. However, I also had to overcome all the associated difficulties which in turn helped to improve my problem solving skills. Right now I am working in Robotics and Machine Vision issues at a research institution in Valencia, Spain and this Ph.D. program has helped opening new doors or ideas for future developments in this area. My recommendation to future Ph.D. students is for them to first analyse and define carefully the goals of the Ph.D. and plan all steps required to reach those goals successfully. If needed seek help from others and perform all important tasks in detail knowing exactly what and why you are doing them.

João Paulo Canejo (Ph.D. in 2012)

The decision to apply and integrate the materials doctoral programme of the Faculdade de Ciências e Tecnologia of the Universidade Nova de Lisboa was an easy one to make. My research interests are the study of liquid crystal phases obtained from cellulosic materials. In this programme I found the opportunity to work in a well-known research group in the area and in a renowned University. During the programme I was given access to state-of-the-art techniques and to the necessary conditions to perform my research. Being able to work in close contact with experienced scientists, some of them from other countries, was a strong point the programme.

Currently, I am working as post-doc in the Universidade Nova de Lisboa, were I can take profit of what I have learned during the Ph.D. work.

For students who want to perform scientific research and to work in a laboratorial environment this doctoral programme is, in my opinion, an excellent option. It will give young researchers the necessary tools to succeed in the scientific world.

Sofia Prata (Ph.D. in 2012)

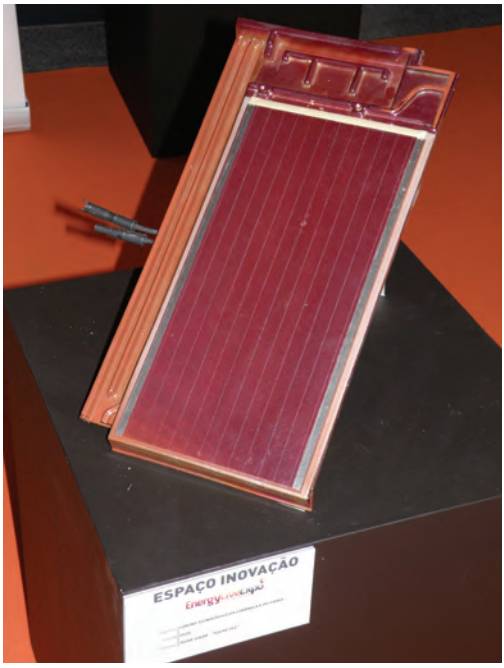
The doctoral program in material science and engineering allows me, at the moment, to work in the medical device industry, always connected to research and development of new products. As technical responsible of a medical device company, skills acquired during the Ph.D. are daily tools essential to find new solutions and solving problems.

During the doctoral program, we face a lot of difficulties and it is very important to have the scientific and technical support of the supervisors and the accompanying commission of the thesis, which guarantees innovative technology and scientific support.

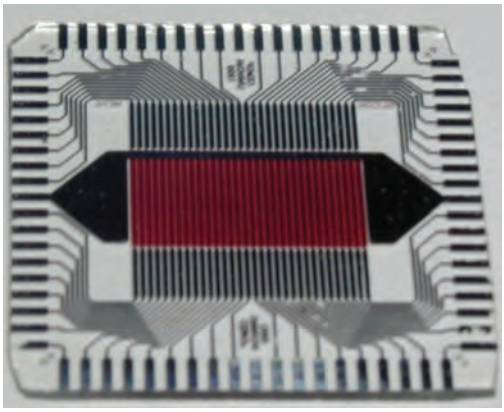
Looking back, it was a great experience that originated further work perspectives.

Thesis Completed in the Last Five Years

Name	Diploma Date	Thesis Title	Supervisor/Co-Supervisor(s)	Actual Position
Hugo Miguel Lisboa Oliveira	06-01-2012	Production of Chitosan and Development of New Materials from Food Waste	Prof. João Paulo Borges/ Prof. Ana Maria Martelo Ramos (DQ/FCT-UNL), Dr. Eduardo Pires (Ceramed)	Professor at Universidade Federal de Campina Grande
João Paulo Godinho Canejo	09-02-2012	Helices and Spirals in Cellulosic Liquid Crystals	Prof. Maria Helena Godinho	Post-Doc at DCM/ FCT-UNL
Sofia Gonçalves Mousinho Prata	05-12-2012	Development of New Biocompatible Implants for Bone Regeneration	Prof. João Paulo Borges/ Dr. Eduardo Pires (Ceramed), Dr. Carlos Novo (INETI)	Ceramed Technical Coatings
Yong Geng	19-09-2013	Old Cellulose for New Multifunctional Networks	Prof. Maria Helena Godinho/ Prof. Pedro Lúcio Almeida (ISEL/IPL)	Post-Doc at Otto von Guericke University Magdeburg (Germany) Department of Nonlinear Phenomena
Ana Espiga Machado Henriques	18-06-2014	Production of Matrices Based on Chitosan for Wound Treatment	Prof. João Paulo Borges/ Prof. Jorge Carvalho da Silva (DF/FCT-UNL), Dr. Eduardo Pires (Ceramed)	4Tune Engineering – Consultant for Manufacturing Science and Technology
Javier Contreras Aparício	07-10-2014	Amorphous Silicon 3D Sensors Applied to Object Detection	Prof. Isabel Ferreira/ Prof. Rodrigo Martins, Prof. Luís Gomes	Own start-up in Valencia/ Spain



Solar tiles: Joint QREN project coordinated by Revigres, Innovation Award in “Energy Live Expo” 2012.



32 3D Position sensitive a-Si:H sensor, 1st ANIMEE prize, 2004

Thesis Not Yet Submitted

Name	Thesis Title	Supervisor/Co-Supervisor(s)
Nuno Miguel Pinto das Neves	Development of ceramic targets for sputtering based on nanomaterials	Prof. Isabel Ferreira/ Dr. Ana Lúcia Lagoa (INNOVNANO - Materiais Avançados S.A)
Carlos José de Faria Teixeira	Production and characterization of solar cells in flexible substrates	Prof. Isabel Ferreira / Prof. João Paulo Borges
Ana Catarina Bernardino Baptista	Development of Bio-Batteries based on Electrospun Membranes	Prof. Isabel Ferreira / Prof. João Paulo Borges
Helena Mafalda Reis Orvalho	Transparent electrodes and Alternative Thin Film	Dr. Thomas Kroyer(Materials Research and Applied Optics - Fraunhofer-Institut für Solare Energiesysteme) / Prof. Isabel Ferreira
Carlos Filipe Cidre João	Liquid Crystalline Inverse Opals: New Bone like Assemblies for Tissue Engineering	Prof. João Paulo Borges / Prof. Carvalho da Silva (DF/FCTUNL)
Rui Luís Câmara Borges	Portuguese silver jewelery of Sec. XV to XVII. - Characterization of silver alloys and provenance relations	Prof. Rui Silva/ Dr. José Estevão Grande Candeias (Instituto dos Museus, Conservação)/ Dra. Maria de Fátima Duarte Araújo (Instituto Tecnológico e Nuclear)
João Pedro de Sousa Oliveira	Soldering of shape memory NiTi alloys	Prof. Francisco Brás Fernandes
Roque Gonçalo Saldanha Soares	Synthesis and characterization of fluorcanasite glass-ceramics towards the utilization as dental restorative materials	Prof. Regina Monteiro
Cláudia Marina Ranito Lourenço	Development of polymeric membranes for soft tissue regeneration	Prof. João Paulo Borges
Nuno Miguel dos Santos Puna	Development of new osteoconductive coatings for dental implants with antimicrobial activity	Prof. João Paulo Borges/ Prof. Isabel Ferreira
Patrícia Freitas Rodrigues	Microstructural evolution of wires of Ni-Ti alloys produced by hot and cold forging process	Prof. Francisco Brás Fernandes

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