TÉCNICO LISBOA

Early Stage Researcher (PhD Thesis Student) (m/f) position within Marie Curie Initial Training Network (ITN):

SPRITE-Supporting Postgraduate Research with Internships in industry and Training Excellence: *FP7-PEOPLE-2012-ITN, Grant agreement no. 317169.*

Subject: **Improvement of Rare Earth luminescence efficiency in $Al_xGa_{1-x}N$ alloys.**

Description

Ion beams are privilege techniques for materials processing and characterization. The aim of this project is the exploitation of ion implantation as a processing technique to dope the wide band gap ternary nitride semiconductor $Al_xGa_{1-x}N$, with optically active rare earth (RE) ions. Wide band gap nitride semiconductors are being studied to become a major material for the development of optical devices operating in the UV-Visible wavelength region of the electromagnetic spectrum. With the incorporation of active RE ions it is possible to obtain the sharp emissions from the internal 4f transitions. The incorporation of the REs in optically active sites and the establishment of the conditions to maximize the emission efficiency are the key conditions to incorporate the ion implantation technique into the road map of the nitride technology. We propose to study the implantation conditions to maximize the luminescence emissions of implanted Gd ions giving rise to ultra-violet emission as well as of possible green emitters (Tb, Ho, Er). Co-doping studies will also be performed. A detailed study of the implantation (temperature and direction) and post annealing conditions will be performed in alloys with different AlN content. The evolution of the implanted samples will be assessed with Ion Beam Analysis (IBA), electron microscopy and luminescence techniques. The candidate will be integrated in a active research group and develop independent research as part of his/her PhD programme.
Nr of positions: 1

Research Fields

Physics and Materials Science

Career Stage

Early stage researcher or 0-4 yrs (Post graduate)

Research Profile

First Stage Researcher

Benefits

This post is Marie Curie funded for a fixed-term of 36 months. The standard rates for Marie Curie Early Stage Researchers apply. In addition a monthly mobility allowance of 595,00 EUR is payable for researchers without a family and 850,00 EUR for those with a family. Further information on the post can be obtained from,

http://ec.europa.eu/.../people?callIdentifier=FP7-PEOPLE-2012-ITN

The candidates should send their applications till 10 August, directly to ealves@itn.pt or lorenz@itn.pt

Curriculum vitae
Motivation letter
Information on how you fulfill the eligibility criteria
2 referees for references

Special Conditions:

Applicants must satisfy the Marie-Curie Early Stage Researcher eligibility criteria and so should have no more than four years research experience and should not already have a PhD. Owing to EU "mobility" regulations, applications cannot be considered from researchers who have resided or carried out his/her main activity (work, studies, etc) in the country of his/her host organisation for more than 12 months in the 3 years immediately prior to his/her recruitment (Short stays, such as holidays, are not taken into account). This post is Marie Curie funded for a fixed-term for 36 months.

Requirements

Required Education Level

Degree	Master Degree or equivalent
Degree Field	Physics, Materials Science

Required Languages

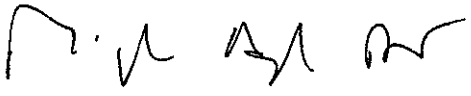
Language	ENGLISH
Language Level	Good

Additional Requirements

We are looking for candidates with a good background in physics and/or materials science and experience on ion beams, X-ray and/or luminescence techniques will be considered favorably.
The Ion Beam Laboratory (www.itn.pt) belongs to Instituto Superior Técnico of the Technical University of Lisbon and carries out applied research on ion beam characterization and processing of advanced materials. A major activity includes the doping of wide band gap materials and low dimensional structures with optical active ions for devices operating in the visible.

IST, 10 de julho de 2013

Prof. Miguel Ayala Botto
Membro do Conselho de Gestão



English version

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For Organisations

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4. Required languages
5. Required research experience

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Português

1. Descrição do cargo/posição/bolsa
1. Job description

Cargo/posição/bolsa:
Early Stage Researcher

Referência: Early Stage Researcher 1/2013

Área científica genérica: Not available

Área científica específica:

Resumo do anúncio:

Texto do anúncio

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IST, 10 de julho de 2013

Prof. Miguel Ayala Botto
Membro do Conselho de Gestão

Número de vagas: 1

Tipo de contrato: Contrato a termo certo

País: Portugal

Localidade: ITN - Polo de Loures

Instituição de acolhimento: Instituto Superior Técnico

Data limite de candidatura: 10 August 2013
(A data limite de candidatura deve ser confirmada no texto do anúncio)

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2. Dados de contactos da organização
2. Organization contact data

Instituição de contacto: Instituto Superior Técnico - DRH

Endereço:
Instituto Superior Técnico, Av. Rovisco Pais
Lisboa - 1049-001 Lisboa
Portugal

Email: recrutamento@drh.ist.utl.pt

Website: *indisponível*

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3. Habilitações académicas
3. Required education Level

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4. Línguas exigidas
4. Required languages

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5. Experiência exigida em investigação
5. Required research experience

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