

ANNOUNCEMENT FOR SCHOLARSHIPS' ASCRIPTION FOR R&D

Title: Research Scholarship (1 scholarship)

Accordingly with the "Standards for Assignment of Scholarships in the scope of Research Projects" of the FCT (Portuguese Foundation for Science and Technology), we announce the following **call for one PhD research grant for Master fellows under the research project "Express – Exploration of Portugal's High Speed Rail and Economic Development Strategy Solutions"** (MIT/SET/0023/2009), co-developed by the Instituto Superior Técnico and MIT, and sponsored by the national research funds through FCT/MCTES (PIDDAC) and co-financed by the European Regional Development Fund (ERDF) under the Operational Agenda for Competitiveness Factors – COMPETE. The call is open during 20 working days (as from the date of the official announcement at IST) and the corresponding terms are as follows:

Scientific Field: Systems Engineering – Transportation area

Proposed Work Plan: "Uncertainty and risk analysis of High Speed Railway (HSR) demand survey"

Among the several projects on transports infrastructures undergoing in Portugal, the assessment of the HSR project is extremely relevant. Being at an early stage of development, under a high socioeconomic instability and uncertainty, it implies a large financial investment/commitment and will cause a wide set of negative and positive effects that should be considered for evaluation. The research will be developed under the EXPRESS project that aims to analyzing the strategic planning of the HSR implementation in Portugal, with the objective to maximizing its potential within a wider transport system strategy and economic development.

Recalling that HSR implies high capital investments and operational costs, it is mandatory to assess the uncertainties and risks associated with the projected demand survey and with the expectable competition/coordination/cooperation strategies of the alternative transport modes. The generic tasks that will be developed in this project are the following:

1. Analyze risks and uncertainty factors and how they can be transformed into variables or how they influence the already existent variables in demand models of HSR;
2. Construction of a risk matrix of the estimated demand and respective assignment of transports' infrastructures existent, taking into account the risks and uncertainties of critical factors previously identified;
3. Analyze the uncertainty propagation throughout the demand and assignment models, used in the classical 4-step model;
4. Analyze the adaptation behavior (mainly, competition, coordination and/or cooperation) of the operators of the alternative transportation modes and, thereafter, evaluate how demand could adjust to reach new modal share equilibria in the links analysed, for several socioeconomic scenarios.

Work place: The work will be performed at the Instituto Superior Técnico – Centro de Sistemas Urbanos e Regionais (CESUR - www.civil.ist.utl.pt/nispt), Lisbon, Portugal, under the supervision of Filipe Moura (Assistant Professor in Transportation).

Scholarship duration: The scholarship will take 12 months, with a predicted start on July 2011. The scholarship can be renewed for a maximum period of 36 months.

Monthly Salary: € 980 (nine hundred and eighty Euros) accordingly to FCT standards (<http://alfa.fct.mctes.pt/apoios/bolsas/valores>).

Admission requirements:

- (1) Hold a Master Degree in Civil Engineering, Land-use Planning and/or Engineering, Physics Engineering, Economics or Statistics,
- (2) Basic background on both statistical analysis and modeling (preferably in transports) and
- (3) Master English Language (Speaking, reading and writing).

Selection procedure: Final selection of grant holders will be as follows:

- (4) Curriculum Vitae Evaluation (*35% of final score*)
- (5) Interview (*35% of final score*)
- (6) Recommendation Letters (the letters should be directly sent by the authors to the following email address: fmoura@ist.utl.pt) (*20% of final score*), and
- (7) Motivation Letter (*10% of final score*).

Publication form/notification of results: The final selection will be listed according to the final score and published in a visible and public place at Instituto Superior Técnico (Human Resources Direction's showcase) and all candidates will be notified through email.

Application Documents:

- Curriculum Vitae (indicate Passport Number if you are a foreigner),
- Certificate of Achievement,
- Motivation Letter, and
- Other relevant documents.

Applications should be sent to Ms Carina Pacheco (carina.pacheco@civil.ist.utl.pt).

Inquiries and questions should be addressed to Ms Teresa Afonso (tafonso@civil.ist.utl.pt).