

Call for 1 (one) Research Fellowship for a MSc

Within the scope of project Constant Mesh Stiffness Gears, a call for one Research Fellowship under the following terms and conditions is now open for a MSc:

Work plan title: Constant Mesh Stiffness gears for improved NVH behaviour.

1. Duration and regime of activity:

Duration of 12 months, extendable to the end of the project, forecasted to start in October 2018 in exclusivity regime, according to the current regulation for Advanced Training and Qualification of Human Resources from the Science and Technology Foundation (FCT) in effect, <http://www.fct.pt/apoios/bolsas/regulamentos.phtml.en>, and INEGI's Fellowships Regulation.

2. Work place and scientific orientation:

The work will be undertaken at the INEGI facilities, Porto, Portugal under guidance of Prof. Doutor Jorge Humberto Seabra.

3. Brief description of the project:

Gear mesh stiffness variations along the plane of action in parallel axis gears (spur and helical) are closely related to the phenomena of self-excitation, vibration and dynamic overload as well as transmission error and operating noise, as shown by several studies. The goal of this work is the development of the concept of constant mesh stiffness gears aiming to improve the dynamic characteristics of the gear meshing (NVH: Noise, Vibration and Harshness) keeping in mind the energetic efficiency of the gear and the complete gearbox.

4. Fellowship activity:

Study and development of the concept of constant mesh stiffness gear aiming for improved NVH characteristics. Development and implementation of dynamic models to study the gear meshing. Study of profile modifications to minimize the gear mesh stiffness variations.

5. Required academic background:

Master's Degree in Mechanical Engineering, with a final grade of 15 (in a scale from 0 to 20) or more. Desirable skills and qualifications:

- i) Advanced knowledge in gear design: High priority;
- ii) Experience in gear dynamics modeling and simulation: High priority;
- iii) Knowledge on Contact Mechanics and Lubrication;
- iv) Portuguese and English languages: High priority, technical proficiency;
- v) Ability to do independent and team work.

6. Fellowship allowance:

In accordance with the current values for a Scientific Research Fellowships in Portugal defined by FCT-Portuguese Foundation for Science and Technology (980 Euro per month), (www.fct.pt/apoios/bolsas/valores) paid at the end of the month by bank account transfer. Personal injury safety is also covered as is voluntary social security in the applicable cases.

7. Applicable legislation and regulation:

The fellowship contract will be celebrated according to the "Regulations for Research Grants of the Foundation for Science and Technology" currently in effect, to the INEGI Grant regulations approved by FCT, and to the Statute of Scientific Research Fellow Holder (Lei nº 40/2004 de 18 de Agosto, and its successive amendments) www.fct.pt/apoios/bolsas/docs/RegulamentoBolsasFCT2015.pdf.

8. Selection method:

The selection method consists of two phases. In a first phase a curriculum evaluation (40% weight) will be performed to select candidates passing to a second phase; in a second phase the selected candidates will be interviewed (60% weight), with the purpose of producing an ordained list of selected candidates according to the specified selection criteria. Preferable selection criteria are: the scientific merit of the candidate; profile adequacy to the fellowship topics, motivation and relevant experience for the project of the call; sustained demonstration of good interpreting and writing capabilities in English. The jury reserves the right to voiding the call, in case no suitable candidates are presented that satisfy the specified qualifications.

9. Selection jury:

Prof. Doutor Jorge Humberto Seabra (PI), Doutor Ramiro Carneiro Martins and Doutor Pedro M. Teixeira Marques.

10. Notification of results:

Final results of the evaluation will be published online at <http://www.inegi.up.pt>.

11. Application documents:

- I. Presentation and motivation letter demonstrating adequacy to the requested profile;
- II. Curriculum vitae;
- III. MSc degree certificate with a list of attended subjects (with grades) - Academic degree recognized in Portugal (this is only for candidates outside the European Union);
- IV. English language certificate with degree / level;
- V. Copy (in digital format) of 1 (one) technical document (preferably in English) produced by the candidate (preferably the master's dissertation but, alternatively, report, article, ...) highlighting and attesting his / her writing and production capacity of technical documents.

12. Application deadline and submission:

The call is open from **14 to 25 September 2018**. Application documentation may be posted to the official INEGI's page at www.inegi.up.pt Working at INEGI | Available Vacancies, pressing **Submit**

The Scholarship Support Office of INEGI is open Mondays to Fridays, 10:00 to 12:00 at the Human Resources Services.

INEGI

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