



Escola Politécnica
Universidade de São Paulo



O Laboratório de Fenômenos de Superfície (LFS) do Departamento de Engenharia Mecânica da Escola Politécnica da USP tem o prazer de anunciar o curso:

Principles of Surface Texturing

by

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The course will have the duration of 8 hours, which will be divided as follows:

Day 1 – 02 February 2010 – From 10:00 to 12:00

Qualitative overview on the principles of surface texturing, covering applications such as dynamic sealing, thrust bearings, magnetic recording and internal combustion engines.

Day 2 – 03 February 2010 – From 10:00 to 12:00

Use of the Reynolds equation to analytically model surface texturing applied to **mechanical seals** and correspondent experimental validation. These discussions will be based on the following papers:

- Analytical and Experimental Investigation of Laser-Textured Mechanical Seal Faces, Tribology Transactions 42 (1999) 522-516
- A Laser Surface Textured Hydrostatic Mechanical Seal, Tribology Transactions 45 (2002) 430-434

Day 3 – 04 February 2010 – From 10:00 to 12:00

Use of the Reynolds equation to analytically model surface texturing applied to **thrust bearing and piston rings** and correspondent experimental validation. These discussions will be based on the following papers:

- A Laser Surface Textured Parallel Thrust Bearing, Tribology Transactions 46 (2003) 397-403
- Experimental Investigation of Laser Surface Textured Parallel Thrust Bearings, Tribology Letters 17 (2004) 295-300



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- Friction-Reducing Surface-Texturing in Reciprocating Automotive Components, Tribology Transactions 44 (2001) 359-366

Day 4 – 05 February 2010 – From 10:00 to 12:00

Use of the Reynolds equation to analytically model surface texturing applied to **piston rings (cont.)** and correspondent experimental validation.

Experimental analysis on surface textured **piston rings** and **piston pins**.

These discussions will be based on the following papers:

- Experimental Investigation of Laser Surface Texturing for Reciprocating Automotive Components, Tribology Transactions 45 (2002) 444-449
- Improving Tribological Performance of Piston Rings by Partial Surface Texturing, Transactions of the ASME – Journal of Tribology 127 (2005) 632-638
- Improving Fuel Efficiency with Laser Surface Textured Piston Rings, Tribology International 41 (2009) 542-547
- The Effect of Various Surface Treatments on Piston Pin Scuffing Resistance, Wear 261 (2006) 785-791

Local: Departamento de Engenharia Mecânica – Escola Politécnica da Universidade de São Paulo. Av. Prof. Mello Moraes, 2231 São Paulo, SP.

Inscrições gratuitas e maiores informações com Silene Carneiro em silene@usp.br – telefone: (11) 3091-9855 - Vagas limitadas.