



Seminar on Piezoelectric Ceramics

A guided tour about materials and applications

Contents

Day 1: Overview of piezoelectric ceramic materials and their use.

- Historical background.
- Lead zirconate titanate (PZT): materials data.
- Different families of PZT materials.
- Lead-free materials.

Day 2: How to design and application and some examples of modern applications.

- Modelling with Pspice.
- Modelling with Finite Element Analysis.
- More on materials data.
- Examples of applications: *Atomic Force Microscope, High Power Ultrasonic tools, Piezoelectric Transformers, Ink-jet printers, Energy Harvesting, Medical Applications, Sensors and actuators in automobiles*

Klaus Brebøl



Klaus Brebøl was born in Vordingborg (Denmark) in 1958 and received his M.Sc. in 1983 from DTU, The Technical University of Denmark, and three years later an Industrial Ph.D. from The Danish Academy of Technical Science. During this time he developed his research work partly at Brüel&Kjaer Sound and Vibration A/S. Between 1983 and 1994 he was employed by Ferroperm Piezoceramics A/S. Since 1994 he is self-employed as a consultant within applications of piezoelectric materials, mainly sensor and high power applications, especially piezoelectric transformers. The use of finite element simulations has given him an interest in better characterization of piezoelectric materials, since results are only as good as the data in which they are based.

Timetable / Room

Room: A3005

Tuesday 28th April: 15:30h -17:30h

Wednesday 29th April: 15:30h - 17:30h

Audience and Inscriptions

This seminar is mainly aimed to Master students as well as undergraduate students in the 4th year.

Inscriptions should be done at room 6104 or mail to: actividades@etsist.upm.es