



ΕΘΝΙΚΟ ΜΕΤΣΟΒΙΟ ΠΟΛΥΤΕΧΝΕΙΟ
ΣΧΟΛΗ ΧΗΜΙΚΩΝ ΜΗΧΑΝΙΚΩΝ

ΕΠΙΤΡΟΠΗ ΣΕΜΙΝΑΡΙΩΝ, Καθηγητής Α. Κοκόσης

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ΣΕΜΙΝΑΡΙΟ ΧΗΜΙΚΗΣ ΜΗΧΑΝΙΚΗΣ

Τρίτη 21 Σεπτεμβρίου 2010, 12:00

Αίθουσα Σεμιναρίων «Ν. Κουμούτσου»

Prof. dr. ir. Jean-Pierre CELIS
Katholieke Universiteit Leuven (Belgium)

Industrial relevance of academic research on pickling of alloyed steels and stainless steels

It is not always evident for researchers and industries to get a right feeling about the added value of scientific research in engineering.

In this presentation, two industrial case studies are presented on how academic research can be beneficial to industry to improve the processing of engineering materials. The case studies deal with a 'old fashioned technology' namely chemical pickling but which is nowadays becoming more and more a challenge due to environmental regulations, complexity of steel assemblies, and requirements on turn-over for economical reasons.

The following items are addressed in this presentation:

- an introduction dealing with: what is pickling? what are the industrial needs? and how does pickling proceeds?
- a first case study: the **pickling of stainless steels** and how to reach an advanced process control based on new insights in the mechanism of pickling
- a second case study: the **hot galvanizing of complex assemblies** made of different steels which is a upcoming challenge in the car industry.

During this presentation it is shown:

- how complex pickling baths can be but that complexity guarantees their efficiency, and
- how electrochemical measurements are a pertinent tool for process development and/or control.