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Computational Design of Deformation Processes for an Accelerated Insertion of Materials by Prof. N. Zabaras, ME & Aerospace Engineering, Cornell University

Education - Lecture/Discussion

Date & Time: Friday, November 21, 2003
2:00 PM-3:00 PM

Suggested College

Audiences:

Location: [WPI: Higgins Laboratories](#)
Room 116
100 Institute Road
Worcester, MA 01609-2280

Sponsored by: Mechanical Engineering

Description: We will discuss recent advances in the development of computational algorithms for the design of multi-stage deformation processes that lead to products of desired properties. A unified approach to both preform (shape) design and process parameter design problems will be discussed. A number of multi-stage forming process design examples will be presented to demonstrate the use of design simulators in an accelerating materials insertion. A number of fundamental multi-length scale deformation process design problems will be discussed next that can be used to obtain materials with desired microstructure-sensitive properties. The use of reduced-order models to model the evolution of the microstructure will be emphasized with emphasis in controlling texture as described by an orientation distribution function in the orientation space. We aim to point to techniques that may be important in controlling microstructure-sensitive properties leading to a materials-by-design approach.

More E-mail: mdemetri@wpi.edu

Information: Phone: 508-831-5236

Entered by: [WPI Mechanical Engineering Department \(me@wpi.edu\)](#)

Last Modified: November 10, 2003 at 01:09 PM

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