

April 28, 2008

Materials: the fourth dimension in structural design

Prof. Fabrizio Barberis

University of Genova
Dipartimento di Ingegneria delle Costruzioni, dell'Ambiente e del Territorio

ABSTRACT OF THE TALK

In the past few materials were available for a given engineering application. The engineer's task was exclusively to fix the correct dimensions of structural components in order to resist the design loads. In the last decades material science has developed to such an extent as to make the choice of materials, in addition to structural calculations, a key item to structural design. The material selection involves a wide number of properties which are the result of both the fabrication technology and the specific features at micro/nano scale. The role of Material Science and Engineering is just in providing a bottom-up approach, from molecular level up to microstructure, to meet the needs of high tech applications.

A panorama of some aspects and key points concerning this discipline will be given in the present talk.