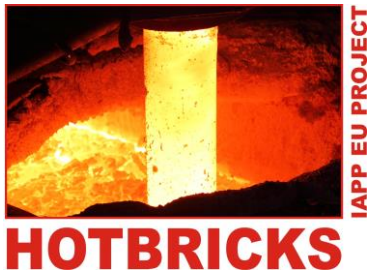




UNIVERSITÀ DEGLI STUDI  
DI TRENTO

Dipartimento di Ingegneria Civile,  
Ambientale e Meccanica



Mechanics of refractory  
materials at high-temperature  
for advanced industrial  
technologies  
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## AVVISO DI CORSO

Si comunica che **giovedì 20 (14:30-18:30) e venerdì 21 (8:30-12:30) marzo 2014**  
si terrà presso l'aula **B2** (via Mesiano 77) il seguente corso

### **Martensitic microstructures: interfaces, size effects and multiscale modelling**

**Prof. Stanislaw Stupkiewicz**

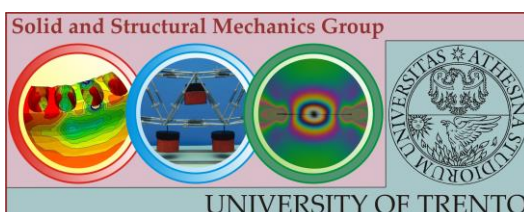
*Visiting Professor at University of Trento, Italy*

*Department of Mechanics of Materials, IPPT, Warsaw, Poland*

Martensitic phase transformation is the basic mechanism responsible for the functional properties of shape memory alloys (SMA). The related phenomena, such as the shape memory effect and the pseudoelastic effect, are associated with formation and evolution of complex martensitic microstructures, i.e. with propagation of interfaces (phase transformation fronts) within the material. The course will cover an introduction to martensitic microstructures, including the physical background, as well as selected advanced topics, mostly related to stress-induced transformations. The focus will be on interfaces, interfacial energy effects, and consequences of microstructure evolution as exhibited on the macro-scale. Specific topics include: compatibility conditions at interfaces, crystallographic theory of martensite, micro-macro transition for evolving laminates, elastic micro-strain energy at microstructured interfaces, interfacial energy and size effects in martensitic microstructures. SMA will be used as a primal application area, however, related mechanisms are observed in other advanced materials, such as high-strength TRIP and TWIP steels, magnesium alloys, intermetallics and others.

Tutti gli interessati sono invitati a partecipare.

Il seminario è organizzato dal gruppo di Scienza delle Costruzioni  
(D. Bigoni, L. Deseri, N. Pugno, M. Gei, F. Dal Corso, A. Piccolroaz, R. Springhetti)



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