

Alloys at the nanoscale: fascinating structures and properties

Introduce:

Prof. Luca GAVIOLI

Università Cattolica del Sacro Cuore

Interviene:

Prof. Riccardo FERRANDO

Chemistry and Industrial Chemistry Dept, University of Genoa, Italy

Abstract:

Alloy nanoparticles (often known as nanoalloys) are bi- or multi-component metallic particles in the size range between 1-100 nm [1]. Nanoalloys present a wide variety structures and properties, that make them suitable for many applications to catalysis, optics, magnetism and biomedicine. The practical use of nanoalloys has a very long history, which dates at least to the Roman age. However the precise characterization of their structures and properties is a recent achievement, mainly of the last two decades. Nanoalloys are now a lively research subject, with several aspects worthy of further investigation. After an overview of their main modern applications, we focus on the structural aspects of nanoalloys, showing how the interplay between atoms of different chemical species leads to the formation of many different types of structures. Examples concerning weakly miscible nanoalloys (AgCu, AgNi, AgCo, AuCo) and strongly miscible nanoalloys (AgPd, AuCu, PtCo) are treated.

[1] R. Ferrando, *Structure and Properties of Nanoalloys*, Elsevier, 2016, ISBN: 978-0-08-100212-4.

Seminario

Giovedì 1 dicembre 2016

Sala Riunioni, ore 12.00

Via dei Musei 41 - Brescia



UNIVERSITÀ
CATTOLICA
del Sacro Cuore