

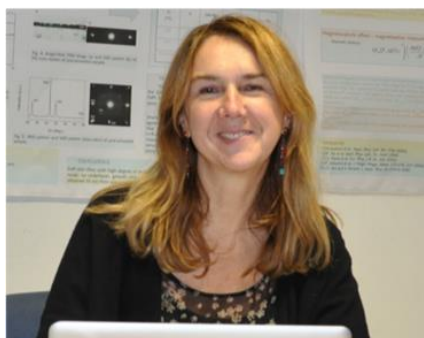
Séminaire de Franca ALBERTINI

Institute of Materials for Electronics and Magnetism - CNR, Parma, Italy

Mardi 18 juin 2024 à 14h00

Salle 4-A014, Institut Jean Lamour, Campus Artem

Permanent magnets for energy applications



Magnetic materials are widely used in several important applicative sectors related to energy conversion, electric power generation, transportation, power electronics, and information technology and play a crucial role in the realization of technologies aimed at energy saving and CO₂ emission reduction. Permanent magnets (PM) find application, for instance, in the generation and conversion of electric power in different strategic sectors, e.g. hybrid and electric vehicle motors, wind power generation, energy harvesting. On the other hand, the best performing permanent magnets are based on rare earths (REs), which are classified as the most critical class of raw

materials for their supply risk.

The large demand of permanent magnets, on the one hand, and the criticality of REs on the other hand, have given a great impulse to the research in this sector, ranging from basic science to engineering.

This lecture will provide an overview of the basic and functional properties of some emerging classes of permanent magnets for energy applications and will focus on some scientific strategies aimed at reducing or eliminating RE content in PM.

Séminaire organisé par le Département Chimie et physique des surfaces et des solides