

FEEDBACK

of scientific supervisor on the Ph.D. thesis "Magnetic anisotropy of oxide nanoarchitectures" by Omelyanchik Alexander Sergeevich in specialty 1.3.12 - Physics of Magnetic Phenomena.

Omelyanchik A. is a junior researcher at Immanuel Kant Federal University. His dissertation on "Magnetic anisotropy of oxide nanoarchitectures" is an interesting and accomplished scientific study. Part of the thesis research was done at Institute of Structure of Matter ISM-CNR and University of Genova, where he studied chemical synthesis of magnetic materials, carried out studies on the structural properties of materials by X-ray diffraction and measured magnetic properties by SQUID and VSM magnetometers. His research activity is related to the study of magnetic properties of nanostructured magnetic materials, including nanoparticles and core/shell nanoparticles.

In this work, a systematic analysis of the correlation between the synthesis parameters, morphostructural and magnetic properties of nanoarchitectures was performed; in particular, factors affecting the magnetic properties of MNPs were determined experimentally. For this purpose, a large array of samples of transition metal oxide MNPs of different compositions with different morphostructural features, in particular such nanoarchitectures as core/shell MNPs and hollow MNPs, were investigated. Some of the studied structures with the specified parameters were investigated for the first time.

The personal contribution of Omelyanchik A. consists in elaboration and analysis of the results of magnetic measurements, X-ray diffraction and electron microscopy. The synthesis of part of the samples as well as the study of their magnetic properties carried out by the Omelyanchik A. The processing, analysis, and description of all the results obtained, as well as the writing of articles, were performed by the author of this dissertation.

Thus, Omelyanchik Alexander Sergeevich is a specialist in the field of physics of magnetic phenomena, who can solve scientific problems at a high level. The presented dissertation "Magnetic anisotropy of oxide nanoarchitectures" corresponds to the requirements for PhD theses, stated in section 2 of the "Regulations on awarding academic degrees at Moscow State University" and its author - Omelyanchik Alexander Sergeevich - is undoubtedly worthy of awarding the degree of candidate of physical and mathematical sciences in specialty 1.3.12 (01.04.11) - Physics of Magnetic Phenomena.

I give my consent to the transfer and processing of my personal data.

Associate Professor of Physical Chemistry,
University of Genova, Department of Chemistry
and Industrial Chemistry (DCIC);
Associate Researcher,
National Research Council (CNR),
Institute of Structure of Matter (ISM).

Phone: +39 06 21128843
E-mail: davide.peddis@unige.it



Davide Peddis