

TITLE OF THE PROJECT: Neutron diffraction and Small angle scattering applications in geosciences (Romanian garnet peridotites, Foltea, Sebeshe formation) and biosciences (supramolecular bio-based nanostructures)

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LABORATORY IN JINR: Frank Laboratory of Neutron Physics (FLNP)

PARTNERS IN ROMANIA: Faculty of Physics, University of Bucharest (FFUB)

RESPONSIBLE PERSONS: Lect. Univ. dr. Marcela-Elisabeta Barbinta-Patrascu (FFUB), Senior Researcher Dr. Tatiana I. Ivankina (FLNP)

OBJECTIVES:

- the implementation and development of innovative strategies of applications of neutron small angle scattering and neutron diffraction to investigate the bio-based and the inorganic materials.

ESTIMATED RESULTS:

The main results expected from this investigation are:

- “green” preparation of supramolecular bio-based nanomaterials
- spectral, structural and morphological characterization of hybrid materials
- evaluation of bio-performances of the obtained materials (antioxidant capacity, antimicrobial activity, haemolytic activity, evaluation of the cytotoxic effects in normal and cancer cell lines)
- selection and analysis by modern physical methods, of some specimens of Romanian garnet peridotites (Foltea, Sebeshe formation)