

Ελλάδα

Ινστιτούτο Θεωρητικής και Φυσικής Χημείας,
Εθνικό Ίδρυμα Ερευνών, Αθήνα, Ελλάδα



Greece

NHRF Institute of Theoretical and Physical Chemistry
The National Hellenic Research Foundation (Athens, Greece)

The Materials Physical Chemistry group of the Institute has long-term experience in the chemistry of glasses and glass/ceramics (e.g. silicates, aluminosilicates, borates etc.), their structural investigation and the development of structure-property correlations. The group runs a synthetic facility and a state-of-the art spectroscopy lab equipped with: FT-IR in the far- to near-infrared range (20-10,000 cm^{-1}), classical Raman and FT-Raman, impedance, UV-VIS and fluorescence instrumentation. Current activities of the group include: (a) the structural evaluation of glasses, e.g. lead-silicates, as a function of materials composition and processing conditions, (b) the dynamics of metal ions in a broad spectrum from dc to the THz region, to determine ionic mobility in binary and multicomponent systems by spectroscopy and molecular dynamics, (c) the synthesis and characterization of glass/ceramics, including low temperature polymorphs formed by sub- T_g devitrification, and (d) the development of new methodologies for quality control and process monitoring in the framework of industrial projects, e.g. near-IR chemometric techniques for the investigation of montmorillonitic clays as a function of chemical substitutions, ionic exchange of the interlayer ions etc.

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