

The list of priority directions

- Design and development problems of Micro-electromechanical systems (MEMS), small-size electromagnetic structures, etc.
- Math. modelling of the heat distribution in the closed-loop systems, piezo-engines, gas flow during chemical reactions etc.
- EM wave systems for home-use appliances etc.
- Design and development of industrial instrumentation in the field of aerosol and gas chemistry, vibrations, heat dissipation, liquid characterization, stress-test.
- Production facility mockup.
- Identification of materials and material families, as well as mixture preparation for the SHS processes, ceramics and metals.
- Technologies and materials for the material combination (sandwiching).
- Formation of pores in materials with non-homogenic stiffness.
- Development of coating technologies.
- EM wave compatibility studies: impact on human cells, home-use electronics.
- Recycling technologies: degradability of complex systems.
- Aerosol characterization and toxicological study.
- Environmental impact validation: Vibration resistivity, Flammability, Degradability.
- Characterization and validation of different materials and their properties (viscosity, stiffness, thermal conductivity, electrical conductivity, interaction with other materials, mixtures, composites, polymers, etc.).
- Measurement techniques to identify the specified the permittivity and permeability of components in the complex mixtures.
- Cross-disciplinary systems test and validation, rapid prototyping and integration of different functional pieces into one system.