



Structure, Thermodynamics and Applications of Ferrofluids

Guest Editor:

Prof. Dr. Istvan Szalai

Institute of Physics and
Mechatronics, University of
Pannonia, Veszprém, Veszprém,
Egyetem u. 10, 8200, Hungary

Deadline for manuscript
submissions:

closed (31 December 2022)

Message from the Guest Editor

Dear Colleagues,

The ferrofluid is a liquid that becomes highly magnetized in the presence of a magnetic field. The measurement of the complex susceptibility of a colloidal suspension of magnetic particles involves the measurement of inductance and resistance of the suspension. The frequency range is determined by the size of the magnetic particles and their subsequent mechanism of relaxation. The conventional method of determining the frequency dependence of the complex susceptibility of a ferrofluid is to insert the fluid into the alternating magnetic field of a coil and observe the changes in its inductance and resistance.

Ferrofluids have many applications ranging from small electronic devices to space crafts to cancer treatments to art. Separation, immunoassay, drug delivery, MRI, and hyperthermia are enhanced by the use of magnetic nanoparticles and ferrofluids.

This Special Issue focus on the structural, transport, and thermodynamic properties of ferrofluids, practical usability of ferrofluid materials in industrial, environmental, and medical, as well as the dependence of the phase equilibrium properties of these complex fluids on external electric and magnetic fields.

