

# Workshop

Magnetic nanoparticles, magnetoresponsive nanocomposites, magnetically controllable fluids and applications

***Laboratory of Magnetic fluids Timișoara 1975-2025***

Timișoara, 23<sup>rd</sup> October 2025

**Lecture Hall “Acad. Ioan Anton” -Faculty of Mechanical Engineering-  
University Politehnica Timișoara**

Bd. Mihai Viteazul nr.1

9.30-10.00 Registration

## **Session 1**

10.00-10.20 Opening address

10.20-10.55 Ladislau Vékás (Center for Fundamental and Advanced Technical Research, Romanian Academy, Timișoara Branch), *Laboratory of Magnetic fluids from Timișoara-50 years of research. A short history*

11.00-11.20 Group photo

## **Aula – Romanian Academy-Timișoara Branch**

Bd. Mihai Viteazul nr.24

11.30-11.50 Coffee break

**Session 2** (each talk 22 min+8 Q&A)

### ***Nanomagnetism, colloidal dispersions***

11.50-12.20 Albert Philipse (Laboratory Van't Hoff-University of Utrecht), *Thermodynamic structure formation in colloidal dispersions of single-domain magnetite nano-particles*

12.20-12.50 Alexandru Morega (Department of Electrical Machines, Materials and Drives, Faculty of Electrical Engineering, National University of Science and Technology POLITEHNICA București) *Shape and Structure: Electromagnetic Field Flux-Flow Interactions in Magnetizable Nanofluids*

12.50-13.20 Erzsébet Illés\* and Etelka Tombácz\*\* (\*University of Szeged; \*\*University Pannonia Veszprém) *Colloidal stability of nanomagnets in biorelevant media, challenges and experiences in the past decades*

13.20-13.50 Victor Kuncser (National R&D Institute for Physics of Materials INCDFM București-Măgurele) *Changing magnetic dimensionality by assembling magnetic nanoelements. New functionalities and applications*

13.50-14.40 Lunch break

**Session 3** (each talk 22 min+8 Q&A)

***Magneto-responsive Nanocomposites***

14.40-15.10 Peter Kopčanský and Milan Timko (Institute of Experimental Physics IEP Kosice, Slovak Academy of Sciences) *Magnetic fluids and their composites*

15.10-15.40 Theodora Krasia-Christoforou (Department of Mechanical and Manufacturing Engineering, University Cyprus) *Romania–Cyprus Synergy in Magnetic Polymer Nanocomposites: A 20-Year Collaborative Journey*

15.40-16.10 Izabela Crăciunescu and Rodica Turcu (National Institute for R&D Isotopic and Molecular Technologies INCDTIM Cluj-Napoca) *Two decades of Magnetic Nanomaterials: Innovation through partnership*

16.10-16.30 Coffee break

**Session 4** (each talk 22 min+8 Q&A)

***Properties and Applications I***

16.30-17.00 Ivo Safarik (Biology Center, Czech Academy of Sciences, České Budějovice) *Advancements in (Bio)Magnetic Research and Technology: A 35-Year Retrospective*

17.00-17.30 Angéla Jedlovsky-Hajdú (Department of Biophysics and Radiation Biology, Laboratory of Nanochemistry, Semmelweis University, Budapest), *Magnetic composite meshes for biomedical applications*

17.30-18.00 Vlad-Mircea Socoliuc (Center for Fundamental and Advanced Technical Research, Romanian Academy, Timișoara Branch), *Applied research-Laboratory of Magnetic Fluids from Timișoara*

18.00-18.20 Coffee break

**Session 5** (each talk 22 min+8 Q&A)

***Properties and Applications II***

18.20-18.50 Corneliu Bălan (Department of Hydraulics, Hydraulic Equipment and Environmental Engineering, National University of Science and Technology POLITEHNICA Bucharest) *Viscosity function of complex fluids under external fields*

18.20-18.50 Tünde Borbáth, István Borbáth, Tiberiu Boros (ROSEAL SA Odorheiu Secuiesc) *High quality ferrofluids and leakage-free rotating seals. Technology transfer, developments and perspectives*

18.50-19.20 Sebastian Muntean (Center for Fundamental and Advanced Technical Research, Romanian Academy, Timișoara Branch), *Flow control in hydraulic machinery using nano-micro composite magneto-rheological fluids*

20.00 **Dinner**