



## Workshop

Magnetic nanoparticles, magnetoresponse  
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

9.00-09.30 Registration

### Session 1

**Chairs:** Liviu Marșavina-University Politehnica Timișoara, Sebastian Muntean-Center for Fundamental and Advanced Technical Research, Romanian Academy – Timișoara Branch

09.30-09.50 Opening addresses

- Prof. Liviu Marșavina, corresponding member of the Romanian Academy, Vice Rector for Research of the University Politehnica Timișoara
- Prof. Dan Dubină, member of the Romanian Academy, President of the Timișoara Branch of the Romanian Academy
- Dr.Eng. Sebastian Muntean, Senior Scientist I, Director of the Center for Fundamental and Advanced Technical Research, Romanian Academy-Timișoara Branch
- Dr. Marius-Ioan Piso, Senior Scientist I, Vice President of the International Academy of Astronautics-video address

09.50-10.25 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*

10.30-10.45 **Group photo**

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

Bd. Mihai Viteazul nr.24

11.00-11.20 Coffee break

**Session 2** (each talk 20 min+5 Q&A)

### ***Magnetic nanoparticle systems, colloidal dispersions I***

**Chairs:** Peter\_Kopčanský, Vlad-Mircea Socoliuc

11.20-11.45 Albert Philipse (Laboratory Van't Hoff - University of Utrecht), *Thermodynamic structure formation in colloidal dispersions of single - domain magnetite nano - particles*

11.45-12.10 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*

12.10-12.35 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*

12.35-13.00 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*

13.00-13.50 Lunch break

**Session 3** (each talk 20 min+5 Q&A)

### ***Magnetic nanoparticle systems, colloidal dispersions II***

**Chairs:** Albert Philipse, Alexandru Morega

13.50-14.15 Peter Kopčanský and Milan Timko (Institute of Experimental Physics IEP Kosice, Slovak Academy of Sciences) *Magnetic fluids and their composites*

14.15-14.40 Theodora Krasia - Christoforou (Department of Mechanical and Manufacturing Engineering, University Cyprus) *Romania–Cyprus Synergy in Magnetic Polymer Nanocomposites: A 20-Year Collaborative Journey*

14.40-15.05 Victor Kuncser (National R&D Institute for Physics of Materials INCDFM București - Măgurele) *Changing magnetic dimensionality by assembling magnetic nanoelements. New functionalities and applications*

15.05-15.30 Claudiu Fleacă, Florian Dumitrache (National R&D Institute for Laser Plasma and Radiation Physics INCDFLPR București - Măgurele) *Magnetic Nanoparticles synthesized by laser pyrolysis: morpho-structural properties and applications*

15.30-15.50 Coffee break

**Session 4** (each talk 20 min+5 Q&A)

### ***Properties and Applications I***

**Chairs:** Theodora Krasia - Christoforou, Victor Kuncser

15.50-16.15 Ivo Safarik (Biology Center, Czech Academy of Sciences, České Budějovice) *Advancements in (Bio)Magnetic Research and Technology: A 35-Year Retrospective*

16.15-16.40 Angéla Jedlovszky - Hajdú (Department of Biophysics and Radiation Biology, Laboratory of Nanochemistry, Semmelweis University, Budapest), *Magnetic composite meshes for biomedical applications*

16.40-17.05 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*

17.05-17.25 Coffee break

**Session 5** (each talk 20 min+5 Q&A)

### ***Properties and Applications II***

**Chairs:** Ivo Safarik, Corneliu Bălan

17.25-17.50 Tünde Borbáth, István Borbáth, Tiberiu Boros (ROSEAL SA Odorheiu Secuiesc), *High quality ferrofluids and leakage - free rotating seals. Technology transfer, developments and perspectives*

17.50-18.15 Vlad - Mircea Socoliuc (Center for Fundamental and Advanced Technical Research, Romanian Academy, Timișoara Branch), *Twists and turns in applied research - Laboratory of Magnetic Fluids from Timișoara*

18.15-18.40 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*

19.15 **Dinner** – Restaurant Zaza (<https://zazarestopub.ro/#>)