

PERSONAL INFORMATION

Ladislau Nicolae Vékás



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 WORK
EXPERIENCE

- From 2009 – to present **Director of Center for Fundamental and Advanced Technical Research (CFATR), Romanian Academy – Timisoara Branch**
 Romanian Academy – Timisoara Branch, 24 Mihai Viteazu str., 300223 Timisoara, Romania
- Organization of scientific activities of the sections of CFATR
 - Organization of work and research activities of the Laboratory of Magnetic Fluids
- From 1997 – to 2009 **Senior researcher (1st degree); Head of the Laboratory of Magnetic Fluids**
 Business or sector Research
 University Politehnica of Timisoara, Research Center for Hydrodynamics, Cavitation and Magnetic Fluids (RCHCMF)
- Organization of work and research activities: synthesis, characterization and applications of magnetic fluids
- From 1991 – to 1997 **Senior researcher (1st degree); Head of the Laboratory of Magnetic Fluids of RCHCMF**
 Business or sector Research
 University Politehnica of Timisoara, Department of Hydraulic Machinery
- Organization of work and research activities: synthesis, characterization and applications of magnetic fluids
- From 1974 – to 1991 **Senior researcher (3rd degree); Assoc. Prof.**
 Business or sector Research
 University Politehnica of Timisoara, Research Center for Hydraulic Machinery
- Research on the properties, ferrohydrodynamics and engineering applications of magnetic fluids
 - Teaching activities: Course on „Magnetohydrodynamics of magnetic fluids and applications”, diploma works, laboratory works with students
- From 1970 – to 1974 **Scientific researcher**
 Business or sector Research
 Romanian Academy – Timisoara Branch, Center for Technical Researches
- Research on the liquid-vapour phase transition: cavitation and boiling phenomena
- From 1968 – to 1970 **Scientific researcher**
 Business or sector Research
- Research on the liquid-vapour phase transition: cavitation and boiling phenomena
- Business or sector Research

 EDUCATION
AND TRAINING

- From 1977 – to 1983 **Doctor in Physics**
 University „A.I. Cuza” Iasi, Romania
 ▪ Thesis title: Contributions to the metastable states of particles
- From 1963 – to 1968 **Physicist**
 University of Timisoara, Faculty of Physics, Romania

PERSONAL SKILLS

Mother tongue(s) Hungarian, Romanian

Other language(s)	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C2	C1	C1	C2
Russian	A1	B1	A1	A1	A1
German	A1	A1	A1	A1	A1

Organisational / managerial skills As director of CFATR currently responsible for a team of 24 employees
 Experience in project management (active participation and leading of several national and international research projects)
 Member of the International Steering Committee of Magnetic Fluids from 1993, which is responsible for the organization and scientific topics of International Conferences on Magnetic Fluids ICMF)
 Organizer of national and international workshops on magnetic fluids beginning with 1980
 Member of the Editorial board of four international journals

Job-related skills Firm background in physics of magnetic materials and colloids
 Instrumentation and measurement methods in flow and magnetic properties of magnetizable fluids
 Magnetic nanofluids/ferrofluids and magnetorheological fluids

Digital competence Free in Microsoft Office

Other skills Good ability to work in research teams (regular scientific co-operation in everyday research work, participation in national and/or international research projects)
 Good ability to adapt to multicultural environments (experience from being short term, 2 weeks-3 months, visiting Germany, Hungary, France)
 Teaching experiences (two courses: “Magnetohydrodynamics and energy Conversion” and “Magnetohydrodynamics of Magnetic Fluids and Applications of Magnetic Fluids” in the period 1978-1992)

Driving licence -

ADDITIONAL INFORMATION

Publications	- over 200 papers in peer reviewed journals and conference proceedings (155 in WoS-Core collection); 2 books, 14 book chapters; co-author of 15 Romanian patents;
Presentations	- a great number of talks at national and international conferences
Projects	- national and International projects coordinator/responsible: over 55 ;
Honours and awards	- Dragomir Hurmuzescu Prize of the Romanian Academy, 1983;
Memberships	- full member of the Romanian Academy; Member of the European Academy of Sciences and Arts (Salzburg); Expert of the ad hoc Working group "Nanoscience" (1998-1999) and of the Working group "NanoSTAG" (2000 -2004) of COST (DG XII-EC Bruxelles);

ANNEXES

Publications (selection)

Review papers:

I. Anton, I. De Sabata, **L.Vékás**, *Application orientated researches on magnetic fluids* (review), J. Magn. Magn. Mater., 85, 219-226 (1990); I. De Sabata, N.C. Popa, I. Potencz, **L. Vékás**, *Inductive transducers with magnetic fluids*, Sensors and Actuators A, 32, 678-681 (1992); **Vékás L.**, Bica D., Avdeev M.V., *Magnetic nanoparticles and concentrated magnetic nanofluids: Synthesis, properties and some applications* (review), China Particuology, 5, 43-49 (2007); **Vékás L.**, *Ferrofluids and Magnetorheological Fluids* (review), Advances in Science and Technology, 54, 127-136 (2008); E. Tombácz, R. Turcu, V. Socoliuc, **L. Vékás**, *Magnetic iron oxide nanoparticles: recent trends in design and synthesis of magnetoresponsive nanosystems* (review), Biochemical and Biophysical Research Communications, 468, 442-453(2015); Vlad Socoliuc, Davide Peddis, Viktor I. Petrenko, Mikhail V. Avdeev, Daniela Susan-Resiga, Tamas Szabó, Rodica Turcu, Etelka Tombácz, **Ladislau Vékás**, *Magnetic Nanoparticle Systems for Nanomedicine—A Materials Science Perspective* (review; feature paper), Magnetochemistry, 6(1) 2 (2020) (36 pg); Theodora Krasia-Christoforou, Vlad Socoliuc, Kenneth D. Knudsen, Etelka Tombácz, Rodica Turcu, **Ladislau Vékás**, *From single-core nanoparticles in ferrofluids to multi-core magnetic nanocomposites: Assembly strategies, structure and magnetic behavior* (review; feature paper), Nanomaterials, **10**, 2178(2020)(67 pg).; V. Socoliuc, M.V. Avdeev, V. Kuncser, Rodica Turcu, Etelka Tombácz, **L. Vékás**, *Ferrofluids and bio-ferrofluids: looking back and stepping forward*, Nanoscale, 14, 4786–4886 (2022) (101 pg).

Articles (last 7 years; selection):

Sandor I. Bernad, Alin F. Totorean, **Ladislau Vekas**, *Particles deposition induced by the magnetic field in the coronary bypass graft model*, J. Magn. Magn. Mater., 401 269–286 (2016); Oana Marinica, Daniela Susan-Resiga, Florica Balanean, Daniel Vizman, Vlad Socoliuc, **Ladislau Vekas**, *Nano-micro composite magnetic fluids: magnetic and magnetorheological evaluation for rotating seal and vibration damper applications*, J.Magn.Magn.Mater., 406 134-143 (2016); D. Susan-Resiga, **L. Vekas**, *Ferrofluid-based magnetorheological fluids: tuning the properties by varying the composition at two hierarchical levels*, Rheol Acta 55(7)581-595(2016); D Susan-Resiga, **L Vékás**, *Ferrofluid based composite fluids: Magnetorheological properties correlated by Mason and Casson numbers*, Journal of Rheology 61 (3), 401-408(2017); Rafaella Ilia, Ioanna Liatsou, Ioanna Savva, Eugenia Vasile, **Ladislau Vekas**, Oana Marinica, Fotios Mpekris, Ioannis Pashalidis, Theodora Krasia- Christoforou, *Magnetoresponsive polymer networks as adsorbents for the removal of U(VI) ions from aqueous media*, European Polymer Journal, 97, 138-146(2017); Cristian Vulcu, Dan Dubină, Nicolae Popa, Ladislau Vekas, Gheorghe Ghiță, Tudor Sireteanu, Istvan Borbath, Radu Oprescu, *Hybrid seismic protection system: Buckling restrained brace of nano-micro composite magneto rheological damper*, cel/papers, 1, 2-3, 2936-2945(2017); Corina Vasilescu, M. Latikka, K. D. Knudsen, V. M. Garamus, V. Socoliuc, Rodica Turcu, Etelka Tombacz, Daniela Susan-Resiga, R. H. A. Ras and **L. Vekas**, *High concentration aqueous magnetic fluids: structure, colloidal stability, magnetic and flow properties*, Soft Matter, 2018, 14, 6648—6666; V.I.Petrenko, O.P.Artykulnyi, L.A.Bulavin, L.Almásy, V.M.Garamus, O.I.Ivankov, N.A.Grigoryev,

L.Vekas, P.Kopcansky, M.V.Avdeev, *On the impact of surfactant type on the structure of aqueous ferrofluids*, Colloids and Surfaces A: Physicochemical and Engineering Aspects, Vol 541, 222-226(2018); Erzsébet Illés, Márta Szekeres, Ildikó Y.Tóth, Ákos Szabó, Béla Iván, Rodica Turcu, **Ladislau Vékás**, István Zupkó, György Jaics, Etelka Tombácz, *Multifunctional PEG-carboxylate copolymer coated superparamagnetic iron oxide nanoparticles for biomedical application*, Journal of Magnetism and Magnetic Materials, 451, 710-720(2018); SI Bernad, D Susan-Resiga, **L Vekas**, ES Bernad, *Drug targeting investigation in the critical region of the arterial bypass graft*, Journal of Magnetism and Magnetic Materials, 475, 1, 14-23 (2019); Susan-Resiga D, Socoliuc V, Bunge A, Turcu R, **L. Vékás**, *From high colloidal stability ferrofluids to magnetorheological fluids: tuning the flow behavior by magnetite nanoclusters*, Smart Materials and Structures, 28, 115014(2019)(13pp); Amanda Moyano, María Salvador, José C. Martínez-García, Vlad Socoliuc, **Ladislau Vékás**, Davide Peddis, Miguel A. Alvarez, María Fernández, Montserrat Rivas, M. Carmen Blanco-López, *Magnetic immunochromatographic test for histamine detection in wine*, Analytical and Bioanalytical Chemistry, 411(25)6615–6624 (2019); Szakal Raul-Alexandru, Susan-Resiga Daniela, Muntean Sebastian, Ladislau Vékás, *Magnetorheological Fluids Flow Modelling Used in A Magnetorheological Brake Configuration*, 2019 International Conference on ENERGY and ENVIRONMENT (CIEM)403-407(IIEEE); AV Nagorny, V Socoliuc, VI Petrenko, L Almasy, OI Ivankov, MV Avdeev, LA Bulavin, **L Vekas**, *Structural Characterization Of Concentrated Aqueous Ferrofluids*, J. Magn. Magn. Mater., 501, 166445(2020); Thomas Vangijzegem, Dimitri Stanicki, Adriano Panepinto, Vlad Socoliuc, **Ladislau Vekas**, Robert N. Muller, Sophie Laurent, *Influence of Experimental Parameters of a Continuous Flow Process on the Properties of Very Small Iron Oxide Nanoparticles (VSION) Designed for T1-Weighted Magnetic Resonance Imaging (MRI)*, Nanomaterials, 10, 757(2020)(17pp); Sandor I. Bernad, Izabell Craciunescu, Gurpreet S. Sandhu, Dan Dragomir-Daescu, Etelka Tombacz, **Ladislau Vekas**, Rodica Turcu, *Targeted delivery of functionalized magnetoresponsive nanocomposite particles to a ferromagnetic stent*, J. Magn. Magn. Mater., 519, (2020); Savvas Karagiorgis, Alkiviadis Tsamis, Chrysovalantis Voutouri, Rodica Turcu, Sebastian Alin Porav, Vlad Socoliuc, **Ladislau Vekas**, Maria Louca, Triantafyllos Stylianopoulos, Vasileios Vavourakis, Theodora Krasia-Christoforou, *Engineered magnetoactive collagen hydrogels with tunable and predictable mechanical response*, Materials Science and Engineering: C114,111089(2020); Sandor I Bernad, Izabell Craciunescu, Gurpreet S Sandhu, Dan Dragomir-Daescu, Etelka Tombacz, **Ladislau Vekas**, Rodica Turcu, *Fluid targeted delivery of functionalized magnetoresponsive nanocomposite particles to a ferromagnetic stent*, Journal of Magnetism and Magnetic Materials, 519, 167489(2021); OV Tomchuk, MV Avdeev, VL Aksenov, AV Shulenina, OI Ivankov, V Ryukhtin, **L Vékás**, LA Bulavin, *Temperature-dependent fractal structure of particle clusters in aqueous ferrofluids by small-angle scattering*, Colloids and Surfaces A: Physicochemical and Engineering Aspects, 613, 126090(2021); Katerina Philippou, Christos N Christou, Vlad Socoliuc, **Ladislau Vekas**, Eugenia Tanasă, Marinela Miclau, Ioannis Pashalidis, Theodora Krasia-Christoforou, *Superparamagnetic polyvinylpyrrolidone/chitosan/Fe₃O₄ electrospun nanofibers as effective U(VI) adsorbents*, Journal of Applied Polymer Science, 138, 15, 50212(2021); Izabell Craciunescu, Elena Chițanu, Mirela M Codescu, N Iacob, A Kuncser, V Kuncser, V Socoliuc, Daniela Susan-Resiga, Florica Bălănean, G Ispas, Tünde Borbáth, I Borbáth, Rodica Turcu, **L Vékás**, *High performance magnetorheological fluids: very high magnetization FeCo–Fe₃O₄ nanoclusters in a ferrofluid carrier*, Soft Matter, **18**, 626-639(2022); Hedar H Al-Terke, Mika Latikka, Jaakko VI Timonen, **Ladislau Vékás**, Arja Paananen, Jussi Joensuu, Robin HA Ras, *Functional Magnetic Microdroplets for Antibody Extraction*, *Advanced Materials Interfaces*, 9,1, 2101317(2022); María Salvador, José Luis Marqués-Fernández, José Carlos Martínez-García, Dino Fiorani, Paolo Arosio, Matteo Avolio, Francesca Brero, Florica Balanean, Andrea Guerrini, Claudio Sangregorio, Vlad Socoliuc, **Ladislau Vekas**, Davide Peddis, Montserrat Rivas, *Double-Layer Fatty Acid Nanoparticles as a Multiplatform for Diagnostics and Therapy*, Nanomaterials, 12, 2, 205(2022); Sandor I Bernad, Vlad Socoliuc, Daniela Susan-Resiga, Izabell Craciunescu, Rodica Turcu, Etelka Tombácz, **Ladislau Vékás**, Maria C Ioncica, Elena S Bernad, *Magnetoresponsive Functionalized Nanocomposite Aggregation Kinetics and Chain Formation at the Targeted Site during Magnetic Targeting*, Pharmaceutics, 14, 9, 1923(21 pg)(2022)

Book chapters (selection):

Vékás L., Avdeev M.V., Bica D., *Magnetic nanofluids: synthesis and structure*, Chapter 25, in: Donglu Shi (Editor): NanoScience in Biomedicine, Springer (USA) 645-704 (2009); **Vékás L.**,

Tombácz E., Turcu R., Morjan I., Avdeev M.V., Krasia-Christoforou T., Socoliuc V., *Synthesis of magnetic nanoparticles and magnetic fluids for biomedical applications*, in: Nanomedicine – Basic and Clinical Application in Diagnostics and Therapy (Else Kröner-Fresenius Symposia) Editor Christoph Alexiou, Erlangen (Karger Publ.Co., Switzerland, 2011) pp. 35-52; V-M. Socoliuc, **L. Vékás**, *Hydrophobic and hydrophilic magnetite nanoparticles: synthesis by chemical coprecipitation and physico-chemical characterization*, in: **Upscaling of Bio-Nano-Processes** (Eds. H. Nirschl, K. Keller), Springer-Verlag (Berlin), 39-55 (2014); V. I. Petrenko, A. V. Nagorny, I. V. Gapon, **L. Vekas**, V. M. Garamus, L. Almasy, A. V. Feoktystov, M. V. Avdeev, *Magnetic Fluids: Structural Aspects by Scattering Techniques*, Modern Problems of Molecular Physics, Editors Leonid A. Bulavin, Alexander V. Chalyi, pp. 205-226(2017); Al Bosioc, TE Beja, S Muntean, I Borbáth, **L Vékás**, *Experimental investigations of MR fluids in air and water used for brakes and clutches - Materials Design and Applications*, 197-207(2017); Sebastian Muntean, Alin Ilie Bosioc, Raul Alexandru Szakal, **Ladislau Vékás**, Romeo Florin Susan-Resiga, *Hydrodynamic investigations in a swirl generator using a magneto-rheological brake*, Materials design and applications, 209-218, Springer, Cham(2017); Vlad Socoliuc, Victor Kuncser, Rodica Turcu, **Ladislau Vékás**, 4.5 *Magnetic characterization*, in: *Chapter 4: Iron oxide nanoparticle-based contrast agents*, in: *Contrast Agents for MRI: Physical Methods*, Editors: Valerie C. Pierre and Matthew J. Allen (Royal Society of Chemistry UK (2018)) pp. 387-422; Al Bosioc, T Ardelean, R Szakal, S Muntean, I Borbath, **L Vékás**, *Experimental investigations of a MR clutch for a centrifugal pump*, Materials Design and Applications II, 253-263, Springer, Cham(2019); RA Szakal, Al Bosioc, S Muntean, D Susan-Resiga, **L Vékás**, *Experimental investigations of a magneto-rheological brake embedded in a swirl generator apparatus*, Materials Design and Applications II, 265-279, Springer, Cham(2019); **L.Vékás**, *Rheological properties of bimodal magnetic suspensions*, in: *Magnetically Responsive Soft Matter* (Editor Juan de Vicente) Royal Society of Chemistry, 2023.

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