

Curriculum vitae (CV)

Personal information	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; padding: 2px;">First name, last name</td> <td style="border-bottom: 1px solid black; padding: 2px;">Andris Jakovičs</td> </tr> <tr> <td style="padding: 2px;">Birth data</td> <td style="border-bottom: 1px solid black; padding: 2px;">12.08.1950</td> </tr> </table>	First name, last name	Andris Jakovičs	Birth data	12.08.1950
First name, last name	Andris Jakovičs				
Birth data	12.08.1950				
Education					
1990 – 1993: Postdoctoral studies, University of Latvia, Faculty for Physics and mathematics, Riga, Latvia; 1992: Dr. Phys., University of Latvia, Riga, Latvia; 1979: Dr. Phys., Leningrad Technical university, Leningrad, U.S.S.R.; 1973: Dipl. Physics, University of Latvia, Faculty for Physics and mathematics, Riga, Latvia.					
Current employment					
2014 – now: Head of the Chair of Electrodynamics and Mechanics of Continuous Media, Faculty for Physics and Mathematics University of Latvia 1994 – now: Director and head of the management board of “Centre for processes’ analysis and research”, Ltd.					
Previous employment					
1995 – now: Senior researcher, University of Latvia, Laboratory for mathematical modelling of environmental and technological processes, Riga, Latvia; 1995 – 2014: Head of the Laboratory, University of Latvia, Laboratory for mathematical modelling of environmental and technological processes, Riga, Latvia; 1973 – 2014: Assistant, Docent, Associate Professor, University of Latvia, Faculty for Physics and mathematics, Riga, Latvia.					
Research experience					
<i>Research projects:</i> 2017 – 2020: Development, optimisation and sustainability research of smart solutions for nearly zero energy buildings in real climate conditions, ERDF project, ESS2017/209; 2015 – 2018: PhD on Innovation Pathways for TES, INPATH-TES, H2020-LCE-2014-2; 2013 – 2015: Development of sustainable and systemic solutions suitable for Latvian climate conditions and providing qualitative living environment in nearly zero energy buildings, ESF project 2013/0027/1DP/1.1.1.2.0/13/APIA/VIAA/007; 2011 – 2013: Development of composite building structures solutions in accordance with EU requirements in field of energy efficiency and thermal comfort with using of multiphysical modelling method, ERDF project 2011/0003/2DP/2.1.1.1.0/10/APIA/VIAA/041; 2010 – 2013: PhD education in energy efficient electrotechnologies at Russian universities, 511086 – TEMPUS – 1-2010-1-DE-TEMPUS-JPCR; 2010 – 2012 GORWIND – Gulf of Riga as a resource for wind energy;					
<i>Scientific publications:</i> more than 350 scientific publications, more than 90 listed in Scopus, h-index: 10 . Selected publications since 2010:					
<ul style="list-style-type: none"> - T.S. Lundstroem, V. Frishfelds, A. Jakovics. Bubble formation and motion in non-crimp fabrics with perturbed bundle geometry // Composites: Part A: Applied science and manufacturing – 2010, vol. 41, Nr. 1, pp. 83 – 92. - V. Frishfelds, T.S. Lundstroem, A. Jakovics. Lattice gas analysis of liquid front in non-crimp fabrics // Transport in porous media – 2010, vol. 84, Nr. 1, pp. 75 – 93. - S. Gendelis, A. Jakovics. Numerical modelling of airflow and temperature distribution in a living room with different heat exchange conditions // Latvian journal of physics and technical sciences – 2010, Nr. 4, pp. 27 – 43 - J. Grechenkova, A. Jakovich, S. Gendelis. 3D numerical analysis of heat exchange in building structures with cavities // Latvian Journal of physics and technical sciences – 2011, vol. 48, Nr. 1, pp. 					

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- M. Scepankis, A. Jakovics, E. Baake. Statistical analysis of the influence of forces on particles in EM driven recirculated turbulent flows // *Journal of physics: Conference series* – 2011, vol. 333, 012015, 14 p.
- J. Ratnieks, A. Jakovics, J. Klavins. A numerical model for determination of the airborne sound reduction index of porous constructions // *Latvian journal of physics and technical sciences* – 2012, Nr. 3, pp. 47 – 56.
- A. Ozolins, A. Jakovics. Heat and moisture transfer in the multi-layer walls: interaction and influence on the heat losses in the circumstances of changeable external temperature // *Latvian journal of physics and technical sciences* – 2012, Nr. 6, p. 32 – 43.
- S. Spitans, A. Jakovics, E. Baake, B. Nacke. Numerical modelling of free surface dynamics of melt in an alternate electromagnetic field. Part I. Implementation and verification of model // *Metallurgical and Materials Transactions B* – 2013, Vol. 44, Nr. 3, pp. 593 – 605.
- A. Ozolins, A. Jakovich. Risks of condensate formation and mould growth in buildings under Latvian climate conditions // *Latvian journal of physics and technical sciences* – 2013, Nr. 5, pp. 44 - 53.
- V. Geza, B. Nacke, E. Baake, A. Jakovics. Influence of the Richardson number on EM force driven flow structures in square-shaped crucible // *Journal of crystal growth* – 2014 (in press).
- M. Scepankis, A. Jakovics, E. Baake, B. Nacke. Solid inclusions in an electromagnetically induced recirculated turbulent flow: Simulation and experiment // *Int. journal of multiphase flow* – 2014, vol. 64, pp. 19 – 27.
- V. Geza, R. Z. Milenkovic, R. Kapulla, S. Dementjevs, A. Jakovics, M. Wohlmuther. Computational and experimental studies of the flow field near the beam entrance window of a liquid metal target // *Nuclear engineering and design* – 2014, Vol. 275, pp. 96 – 106.
- L. Blacha, S. Golak, A. Jakovics, A. Tucs. Kinetic analysis of aluminum evaporation from the Ti-6Al-7Nb alloy // *Archives of metallurgy and materials* – 2014, Vol. 59, Nr. 1, pp. 275 – 279.
- S. Pavlovs, A. Jakovics, E. Baake, B. Nacke. Melt flow patterns in metallurgical MHD devices with combined inductive and conductive power supply // *Magnetohydrodynamics* - 2014, Vol. 50, No. 3, pp. 303–315.
- S. Sakipova, A. Jakovics. Sail-type wind turbine for autonomous power supply: Possible use in Latvia // *Latvian journal of physics and technical sciences* – 2014, Nr. 6, pp. 13 - 25.
- S. Sakipova, A. Jakovics, S. Gendelis, Z. Kambanova, Y. Kussaiynov. Development a sail type wind turbine for autonomous energy supply according climate conditions // *Eurasian physical technical journal* – 2014, Vol. 11, Nr. 2, pp. 11 – 19.
- I. Beinarts, U. Grunde, A. Jakovics. Distributed multi-sensor real-time building environmental parameters monitoring system with remote data access // *Electrical, control and communication engineering* – 2014, Nr. 7, pp. 41 – 46.
- A. Jakovics, S. Gendelis, J. Ratnieks, S. Sakipova. Monitoring and modelling of energy efficiency for low energy testing houses in Latvian climate conditions // *International Journal of Energy* – 2014, Vol. 8, pp. 76-83.
- W. Holweger, M. Wolf, D. Merk, T. Blass, M. Goss, J. Loos, S. Barteldes, A. Jakovics. White etching crack root cause investigations // *Tribology transactions* – 2015, Vol. 58, pp. 59 – 69.
- S. Spitans, E. Baake, B. Nacke, A. Jakovics. New technology for large scale electromagnetic levitation melting of metals // *Magnetohydrodynamics* - 2015, Vol. 51, No. 1, pp. 121 – 132.
- V. Geza, B. Nacke, E. Baake, A. Jakovics. Anisotropy of flow and transition between mixing regimes in a physical model of directional solidification // *Magnetohydrodynamics* - 2015, Vol. 51, No. 1, pp. 15 – 24.
- S. Pavlovs, A. Jakovics, V. Sushkovs, B. Nacke. LES-study of heat transfer in the melt for metallurgical MHD devices with power supply by induction and over electrodes // *Magnetohydrodynamics* - 2015, Vol. 51, No. 1, pp. 67 - 81.
- M. Scepankis, E. Yu. Koroteeva, V. Geza, A. Jakovics. Simulation of liquid metal flow induced by counter-rotating permanent magnets in a rectangular crucible // *Magnetohydrodynamics* – 2015, Vol. 51, No. 1, pp. 37 - 44.
- S. Spitans, E. Baake, A. Jakovics. New technology for electromagnetic levitation melting of metals // *Applied mechanics and materials* - 2015, Vol. 698, pp. 237 – 244.
- A. Jakovics, S. Gendelis, A. Laizans, D. Verdanjans. Modelling of heat exchange in counter flow

shell-type system // *Advanced materials research* – 2015, Vol. 1117, pp. 126 – 131.

- A. Ozolins, A. Jakovics, S. Gendelis. Impact of different building materials on summer comfort in low-energy buildings // *Latvian Journal of physics and technical sciences* – 2015, vol. 52, Nr. 3, pp. 44 - 57.
- M. Scepanskis, A. Jakovics, E. Baake, B. Nacke. Molten salts cannot be used for the study of turbulent electromagnetically driven flows of liquid metal // *Metallurgical and materials transactions B* – 2015, vol. 46 B, Nr. 5, p. 2015 – 2017.
- M. Ščepanskis, A. Jakovičs, I. Kaldre, W. Holweger, B. Nacke, A. M. Diederichs. The numerical model of electrothermal deformations of carbides in bearing steel as the possible cause of white etching cracks initiation // *Tribology letters* – 2015, Vol. 59, Nr. 2, p. 1 – 10.
- M. Ščepanskis, A. Jakovičs, E. Baake, B. Nacke. A model for homogenization of solid alloying admixtures in an induction crucible furnace // *Steel Research International*, 2015, Vol. 86, pp. 169-174.
- J. Ratnieks, A. Jakovics, S. Gendelis. Transient modelling of thermal conditions in test buildings including radiation // *Energy procedia* – 2015, Vol. 78, pp. 2905 – 2910.
- S. Gendelis, A. Jakovics, L. Bandeniece. Experimental research of thermal comfort conditions in small test buildings with different types of heating // *Energy procedia* – 2015, Vol. 78, pp. 2929 – 2034.
- S. Sakipova, A. Jakovics, S. Gendelis. Studies energy efficiency of the renewable sources use considering climate in Latvia // *Energy procedia* – 2015, Vol. 78, pp. 1980 – 1984.
- M. Scepanskis, M. Sarma, R. Nikoluskins, K. Thomsen, A. Jakovics, P. Vontobel, T. Beinerts, A. Bojarevics, E. Platācis. A report on the first neutron radiography experiment for dynamic visualization of solid particles in an intense liquid metal flow // *Magnetohydrodynamics* - 2015, Vol. 51, No. 2, pp. 257 – 265.
- M. Sarma, M. Scepanskis, A. Jakovics, K. Thomsen, R. Nikoluskins, P. Vontobel, T. Beinerts, A. Bojarevics, E. Platācis. Neutron radiography visualization of solid particles in stirring liquid metal // *Physics procedia* – 2015, Vol. 69, pp. 457 – 463.
- S. Spitans, E. Baake, A. Jakovics, H. Franz. Numerical simulation of electromagnetic levitation in a cold crucible furnace // *Magnetohydrodynamics* - 2015, Vol. 51.
- S. Spitans, E. Baake, B. Nacke, A. Jakovics. Numerical modeling of free surface dynamics of melt in an alternate electromagnetic field. Part II. Conventional electromagnetic levitation // *Metallurgical and materials transactions B* – 2016, vol. 47 B, Nr. 1, pp. 522 – 536.
- M. Scepanskis, A. Jakovics. The magnetohydrodynamic force experienced by spherical iron particles in liquid metal // *Journal of magnetism and magnetic materials* – 2016, vol. 403, pp. 30 – 35.
- S. Sakipova, A. Jakovics, S. Gendelis, E.A. Buketov. The potential of renewable energy sources in Latvia // *Latvian journal of physics and technical sciences* – 2016, Nr. 1, pp. 3 – 13.
- S. Pavlovs, A. Jakovics, E. Baake, V. Sushkovs. Gas bubbles and liquid metal flow influenced by uniform external magnetic field // *Int. journal of applied electromagnetics and mechanics* – Vol 53, 2017, pp. 31 - 41.
- 430. M. Ščepanskis, M. Sarma, P. Vontobel, P. Trtik, K. Thomsen, A. Jakovičs, T. Beinerts. Assessment of electromagnetic stirrers agitated liquid metal flows by dynamic neutron radiography // *Metallurgical and Materials Transactions B*, Vol. 48 B, 2017.

Book chapters:

- A. Jakovics, S. Pavlovs. Computational modelling of induction melting and experimental verification // *ASM Handbook*, Vol. 4c, Induction heating and heat treatment – 2014, ASM International, pp. 416 – 446.
- A. Jakovics, S. Pavlovs. Melting of glasses and oxides // *ASM Handbook*, Vol. 4c, Induction heating and heat treatment – 2014, ASM International, pp. 535 - 547.
- A. Jakovics, S. Pavlovs. 1.3. Basic thermal phenomena. 1.4. Basic fluid dynamics phenomena // *Theoretical background and aspects of electrotechnologies* – 2012, St. Petersburg, pp. 66 – 82, 125 – 136.
- A. Jakovics, S. Pavlovs. 4.7. Induction pumps with permanent magnets. 7. Induction furnaces with cold crucible // *MHD technologies in metallurgy* – 2013, St. Petersburg, pp. 54 – 91.

Awards and scholarships

<p>2010 and 2014: Awards for significant contribution in the preparation of the new professionals and scientific work at University of Latvia;</p> <p>1995 – 1996: Bosch Foundation scholarship at the Leibnitz University Hannover, Institute of Electrotechnologies;</p> <p>1990 – 1992: A. von Humboldt Foundation scholarship at the Leibnitz University Hannover, Institute of Electrotechnologies;</p> <p>1989 – 2014: several short time scholarships from DAAD and A. von Humboldt Foundation at the Leibnitz University Hannover and Bundeswehr University in Hamburg;</p> <p>1985 – 1986: DAAD scholarship at the Leibnitz University Hannover, Institute of Electrotechnologies;</p>
<p>Thesis work led (in last 5 years)</p>
<ul style="list-style-type: none"> - Juris Vencels, Modelling of MHD processes in open code programm environment, University of Latvia, planned to defend 2019; - Jānis Ratnieks, Modelling of heat and moisture transport in rooms for optimisation of thermal comfort conditions, University of Latvia, planned to defend 2018; - Sergejs Spitans, Investigation of turbulent free surface flow of liquid metal in electromagnetic field, University of Latvia, 2015; - Vadims Geža, Investigation of stratified electromagnetically driven flows in electrically conducting fluids. University of Latvia, 2015; - Mihails Scepanšis, The modelling of the behaviour of solid inclusions in the EM induced recirculated turbulent flows of liquid metal, University of Latvia, 2014; - Stanislavs Gendelis, Complex analysis of thermophysical processes in buildings, University of Latvia, 2013; - Andrejs Umbrasko, Heat and mass transfer in electromagnetically driven recirculated turbulent flows, University of Latvia, 2010; - Maksims Kirpo, Modelling of turbulent properties and particle transport in recirculated flows, University of Latvia, 2009.
<p>Pedagogical work</p>
<p>2013 – now: Models of multiphysical processes</p> <p>1998 – now: Computers and programs I</p> <p>2010 – 2014: Problems of environment ant technologies</p> <p>1998 – 2014: Numerical methods</p>
<p>Participation in scientific bodies</p>
<p>2008 – now: Member of Promotion Council for Physics and Astronomy at University of Latvia;</p> <p>2010 – now: Member of the management board of Department of Physics University of Latvia;</p> <p>2004 – now: Expert of Latvian board of sciences in physics and energetic;</p> <p>2002 – now: Member of technical group TGS 2 and expert of European Coal and steel foundation.</p>
<p>Institutional positions</p>
<p>2009 – now: Member of Council of Faculty for Physics and Mathematics University of Latvia;</p> <p>1989 – now: Co-ordinator of a scientific agreement with the Institute of Electrotechnologies of Leibnitz University Hannover.</p>

A. Jakovics

20.07.2017