

Jméno, příjmení, titul žadatele:

Given name, surname, academic degree of student:

David Celný, Ing.

Seznam publikovaných prací:

List of publications:

Články v indexovaných časopisech Web of Science:

Articles in Web of Science indexed journals:

- Publikace k tématu disertace/ Publication related to the topic of dissertation:
 1. Klíma, Martin, **David Celný**, Jiří Janek, and Jiří Kolafa. ‘Properties of Water and Argon Clusters Developed in Supersonic Expansions’, accepted for publication. **(0 citations)**
 2. **Celný, David**, Sven Pohl, Monika Thol, Václav Vinš, Roland Span, and Jadran Vrabec. ‘Thermodynamic Properties of Metastable Liquid and Vapor Phases by Molecular Dynamics with Grid Cluster Criteria’, submitted for publication. **(0 citations)**
 3. Aminian, Ali, **David Celný**, Erik Mickoleit, Andreas Jäger, and Václav Vinš. ‘Ideal Gas Heat Capacity and Critical Properties of HFE-Type Engineering Fluids: Ab Initio Predictions of Cpig, Modeling of Phase Behavior and Thermodynamic Properties Using Peng–Robinson and Volume-Translated Peng–Robinson Equations of State’. *International Journal of Thermophysics* 43, no. 6 (June 2022): 87. <https://doi.org/10.1007/s10765-022-03006-z>. **(0 citations)**
 4. **Celný, David**, Martin Klíma, and Jiří Kolafa. ‘Molecular Dynamics of Heterogeneous Systems on GPUs and Their Application to Nucleation in Gas Expanding to a Vacuum’. *Journal of Chemical Theory and Computation* 17, no. 12 (14 December 2021): 7397–7405. <https://doi.org/10.1021/acs.jctc.1c00736>. **(1 citation)**
 5. Fingerhut, Robin, Gabriela Guevara-Carrion, Isabel Nitzke, Denis Saric, Joshua Marx, Kai Langenbach, Sergei Prokopev, **David Celný**, Bernreuther Martin, Simon Stephan, Maximilian Kohns, Hans Hasse, and Jadran Vrabec. ‘{ms2}: A Molecular Simulation Tool for Thermodynamic Properties, Release 4.0’. *Computer Physics Communications* 262 (2021): 107860. <https://doi.org/10.1016/j.cpc.2021.107860>. **(23 citations)**

6. Vinš, Václav, Ali Aminian, **David Celný**, Monika Součková, Jaroslav Klomfar, Miroslav Čenský, and Olga Prokopová. 'Surface Tension and Density of Dielectric Heat Transfer Fluids of HFE Type-Experimental Data at 0.1 MPa and Modeling with PC-SAFT Equation of State and Density Gradient Theory'. *International Journal of Refrigeration* 131 (November 2021): 956–69. <https://doi.org/10.1016/j.ijrefrig.2021.06.029>. (9 citations)
 7. **Celný, David**, Václav Vinš, and Jan Hrubý. 'Modelling of Planar and Spherical Phase Interfaces for Multicomponent Systems Using Density Gradient Theory'. *Fluid Phase Equilibria* 483 (March 2019): 70–83. <https://doi.org/10.1016/j.fluid.2018.10.014>. (2 citations)
 8. **Celný, David**, Václav Vinš, Barbora Planková, and Jan Hrubý. 'Mathematical Modeling of Planar and Spherical Vapor–Liquid Phase Interfaces for Multicomponent Fluids'. Edited by P. Dančová and M. Veselý. *EPJ Web of Conferences* 114 (2016): 02011. <https://doi.org/10.1051/epjconf/201611402011>. (1 citation)
 9. Vinš, Václav, **David Celný**, Barbora Planková, Tomáš Němec, Michal Duška, and Jan Hrubý. 'Molecular Simulations of the Vapor–Liquid Phase Interfaces of Pure Water Modeled with the SPC/E and the TIP4P/2005 Molecular Models'. Edited by P. Dančová and M. Veselý. *EPJ Web of Conferences* 114 (2016): 02136. <https://doi.org/10.1051/epjconf/201611402136>. (10 citations)
 10. Planková, Barbora, Václav Vinš, Jan Hrubý, Michal Duška, Tomáš Němec, and **David Celný**. 'Molecular Simulation of Water Vapor–Liquid Phase Interfaces Using TIP4P/2005 Model'. Edited by Petra Dančová and Tomáš Vít. *EPJ Web of Conferences* 92 (2015): 02071. <https://doi.org/10.1051/epjconf/20159202071>. (4 citations)
 11. Vinš, Václav, Barbora Planková, Jan Hrubý, and **David Celný**. 'Density Gradient Theory Combined with the PC-SAFT Equation of State Used for Modeling the Surface Tension of Associating Systems'. Edited by Tomáš Vít, Petra Dančová, and Petr Novotný. *EPJ Web of Conferences* 67 (2014): 02129. <https://doi.org/10.1051/epjconf/20146702129>. (4 citations)
- Ostatní/ Other:
12. Vinš, Václav, Jiří Hykl, Jan Hrubý, Aleš Blahut, David Celný, Miroslav Čenský, and Olga Prokopová. 'Possible Anomaly in the Surface Tension of Supercooled Water: New Experiments at Extreme Supercooling down to -31.4 C' 11, no. 11 (2020): 4443–47. <https://doi.org/10.1021/acs.jpcllett.0c01163>. (9 citations)

Konferenční příspěvky:

Contributions at conferences:

- **Publikace k tématu disertace/ Publication related to the topic of dissertation:**
 1. **Celný, David**, Roland Span, and Jadran Vrabec. Nucleation criteria detection as a mean to investigate metastable state. In: *Joint European Thermodynamics Conference*. Praha: AMCA, spol. s r. o., 2021, s. 1-1. Dostupné z: <https://www.jetc2021.eu/>
 2. **Celný, David**, Monika Thol, Sven Pohl, Robin Fingerhut, Václav Vinš, Roland Span, and Jadran Vrabec. Laufzeit-Nukleations-Kriterium für Molekularsimulationen metastabiler Zustände. In: *German conference Thermodynamik-Kolloquium*. Duisburg, 2019.
 3. Vinš, Václav, Jan Hošek, Jiří Hykl, Jan Hrubý, and **David Celný**. Experimental Data for the Surface Tension of Supercooled Water Measured with a Horizontal Capillary Tube. Dostupné z: <http://atpc2016.org/>
 4. **Celný, David**, Václav Vinš, and Jan Hrubý. Mathematical modeling of planar and spherical vapor–liquid phase interfaces for multicomponent fluids. Dostupné z: <http://atpc2016.org/program/index.html#pos>

Příspěvky v ostatních sbornících:

Contributions in other proceedings:

- **Publikace k tématu disertace/ Publication related to the topic of dissertation:**
 1. **David Celný**, Molecular Dynamics of Heterogeneous Systems on GPUs and Application to Nucleation in Gas Expanding to a Vacuum. In: *Doktorandské dny 2021*. Praha: CTU FNSPE. Department of Mathematics, 2021. pages 11 - 12
 2. **David Celný**, Runtime Molecular Simulation, Nucleation Criterion for Metastable States. In: *Doktorandské dny 2019*. Praha: CTU FNSPE. Department of Mathematics, 2019. pages 1 - 16
 3. **David Celný**, Use of GPU for Molecular Simulations of Nucleation and Metastable State. In: *Doktorandské dny 2018*. Praha: CTU FNSPE. Department of Mathematics, 2018. pages 5 - 19
 4. **David Celný**, Model of planar and Spherical Phase Interface Geometries for Multi-Component Mixtures. In: *Doktorandské dny 2017*. Praha: CTU FNSPE. Department of Mathematics, 2017. pages 35 – 45

Studentské práce:

Students work:

- Spilková, G. 2022, *Optimalizace parametrů stavové rovnice PC-SAFT v modelování termofyzikálních vlastností tekutin*, Czech Technical University in Prague. Computing and Information Centre.
 - In the role of consultant

Ocenění:

Awards:

- Award for the best poster: Mathematical modeling of planar and spherical vapor–liquid phase interfaces for multicomponent fluids. at ATCP Yokohama Japan, 2016
- Diplom za výuku v letním semestru 2016 v předmětu Matematická analýza B2.