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Results in the ISI Web of Science database

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Results in the SCOPUS database

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DISSERTATION

Mathematical modeling and experimental investigation of two-phase flow in small diameter tubes, Czech Technical University in Prague, Faculty of Mechanical Engineering, Department of Physics, Defended on January 21, 2010, doi: 10.13140/RG.2.2.31422.48967

SCIENTIFIC ARTICLES IN IMPACTED JOURNALS

1. Hielscher S.[§], Vinš V., Jäger A., Hrubý J., Bretkopf C., Span R.: *A new approach to model mixed hydrates*, **Fluid Phase Equilibria** 459 (2018) 170-185.
2. Vinš V.[§], Hošek J., Hykl J., Hrubý J.: *Surface tension of supercooled water: Inflection point-free course down to 250 K confirmed using a horizontal capillary tube*, **Journal of Chemical & Engineering Data** 62 (2017) 3823-3832.
3. Planková B.[§], Vinš V., Hrubý J.: *Predictions of homogeneous nucleation rates for n-alkanes accounting for the diffuse phase interface and capillary waves*, **Journal of Chemical Physics** 147 (2017) 164702.
4. Vinš V.[§], Jäger A., Hrubý J., Span R.: *Model for gas hydrates applied to CCS systems part II. Fitting of parameters for models of hydrates of pure gases*, **Fluid Phase Equilibria** 435 (2017) 104-117.
5. Vinš V., Jäger A.[§], Span R., Hrubý J.: *Model for gas hydrates applied to CCS systems part I. Parameter study of the van der Waals and Platteeuw model*, **Fluid Phase Equilibria** 427 (2016) 268-281.
6. Jäger A.[§], Vinš V., Span R., Hrubý J.: *Model for gas hydrates applied to CCS systems part III. Results and implementation in TREND 2.0*, **Fluid Phase Equilibria** 429 (2016) 55-66.
7. Vinš, V.[§], Fransen, M., Hykl, J., Hrubý J.: *Surface tension of supercooled water determined by using a counterpressure capillary rise method*, **Journal of Physical Chemistry B** 119 (2015) 5567-5575.
8. Hrubý J.[§], Vinš V.[§], Mareš R.[§], Hykl J., Kalová J.: *Surface tension of supercooled water: No inflection point down to -25 °C*, **Journal of Physical Chemistry Letters** 5 (2014) 425-428.

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9. Vinš V.[§], Planková B., Hrubý J.: *Surface tension of binary mixtures including polar components modeled by the density gradient theory combined with the PC-SAFT equation of state*, **International Journal of Thermophysics** 34 (2013) 792-812.
10. Jäger A., Vinš V.[§], Gernert J., Span R., Hrubý J.: *Phase equilibria with hydrate formation in H₂O + CO₂ mixtures modeled with reference equations of state*, **Fluid Phase Equilibria** 338 (2013) 100-113.
11. Vinš V.[§], Hrubý J.: *Solubility of nitrogen in one-component refrigerants: Prediction by PC-SAFT EoS and a correlation of Henry's law constants*, **International Journal of Refrigeration** 34 (2011) 2109-2117.
12. Vinš V.[§], Hrubý J., Vacek V.: *Numerical simulation of gas-contaminated refrigerant two-phase flow through adiabatic capillary tubes*, **International Journal of Heat and Mass Transfer** 53 (2010) 5430-5439.
13. Hallewell G., Vacek V., Vinš V.[§]: *Properties of saturated fluorocarbons: Experimental data and modeling using perturbed-chain-SAFT*, **Fluid Phase Equilibria** 292 (2010) 64-70.
14. Vinš V.[§], Vacek V.: *Effect of gas impurities on the throttling process of fluorocarbon refrigerants: Estimation of the Henry's law constant*, **Journal of Chemical and Engineering Data** 54 (2009) 2395-2403.
15. Vinš V.[§], Vacek V.: *Mass flow rate correlation for two-phase flow of R218 through a capillary tube*, **Applied Thermal Engineering** 29 (2009) 2816-2823.
16. Vacek V., Vinš V.[§]: *Two-phase flow analyses during throttling processes*, **International Journal of Thermophysics** 30 (2009) 1179-1196.
17. G. Anelli, et al. (The TOTEM Collaboration): *The TOTEM experiment at the CERN Large Hadron Collider*, **Journal of Instrumentation** 3 (2008) S08007.
18. Oriunno M.[§], Battistin M., David E., Guglielmini P., Joram C., Radermacher E., Ruggiero G., Wu J., Vacek V., Vins V.: *Design and prototype studies of the TOTEM Roman pot detectors*, **Nucl. Instrum. Methods Phys. Res.**, A 581 (2007) 499-503
19. Vacek V.[§], Vinš V.: *A Study of the Flow through Capillary Tubes Tuned for a Cooling Circuit with Saturated Fluorocarbon Refrigerants*, **International Journal of Thermophysics** 28 (2007) 1490-1508.

CONFERENCE PROCEEDINGS CITED AT WEB OF SCIENCE AND SCOPUS DATABASES

1. Vinš V.[§], Hykl J., Nikl Z., Čenský M., Hrubý J.: *Surface tension of aqueous binary mixtures under the supercooled conditions – Development of the measuring technique and preliminary data for water + lower alcohols*, EPJ Web of Conferences 180 (2018) 02118.
2. Čenský M.[§], Hrubý J., Vinš V., Hykl J., Šmíd B.: *Investigation of droplet nucleation in CCS relevant systems – Design and testing of the expansion chamber*, EPJ Web of Conferences 180 (2018) 02015.
3. Vinš V.[§], Čenský M., Hykl J., Hrubý J.: *Investigation of droplet nucleation in CCS relevant systems – Design and testing of a CO₂ branch of the mixture preparation device*, EPJ Web of Conferences 143 (2017) 02140.
4. Vinš V.[§], Jäger A., Hielscher S., Span R., Hrubý J., Breitkopf C.: *Temperature and pressure correlation for volume of gas hydrates with crystal structures *sl* and *sII**, EPJ Web of Conferences 143 (2017) 02141.
5. Vinš V.[§], Hošek J., Hykl J., Hrubý J.: *Improvements of the experimental apparatus for measurement of the surface tension of supercooled liquids using horizontal capillary tube*, EPJ Web of Conferences 114 (2016) 02135.
6. Vinš V., Celný D., Planková B.[§], Němec T., Duška M., Hrubý J.: *Molecular simulations of the vapor–liquid phase interfaces of pure water modeled with the SPC/E and the TIP4P/2005 molecular models*, EPJ Web of Conferences 114 (2016) 02136.

7. Celný D.[§], Vinš V., Planková B., Hrubý J.: *Mathematical modeling of planar and spherical vapor–liquid phase interfaces for multicomponent fluids*, EPJ Web of Conferences 114 (2016) 02011.
8. Vinš V.[§], Hošek J., Hykl J., Hrubý J.: *An apparatus with a horizontal capillary tube intended for measurement of the surface tension of supercooled liquids*, EPJ Web of Conferences 92 (2015) 02108.
9. Planková B.[§], Vinš V., Hrubý J., Duška M., Němec T., Celný D.: *Molecular simulation of water vapor–liquid phase interfaces using TIP4P/2005 model*, EPJ Web of Conferences 92 (2015) 02071.
10. Duška M.[§], Němec T., Hrubý J., Vinš V., Planková B.: *Molecular dynamics simulation of vapour-liquid nucleation of water with constant energy*, EPJ Web of Conferences 92 (2015) 02013.
11. Vinš V.[§], Planková B., Hrubý J., Celný D.: *Density gradient theory combined with the PC-SAFT equation of state used for modeling the surface tension of associating systems*, EPJ Web of Conferences 67 (2014) 02129.
12. Hošek J.[§], Vinš V., Hykl J.: *Influence of the light source on the liquid optical element planarity measurement*, Proc. of SPIE 9442 (2014).
13. Vinš V.[§], Hrubý J., Hykl J., Blaha J., Šmíd B.: *Design of an experimental apparatus for measurement of the surface tension of metastable fluids*, EPJ Web of Conferences 45 (2013) 01094.
14. Planková B.[§], Hrubý J., Vinš V.: *Prediction of the homogeneous droplet nucleation by the density gradient theory and PC-SAFT equation of state*, AIP Conf. Proc. 1527 (2013) 101-104.
15. Hrubý J.[§], Planková B., Vinš V.: *Corrections to the classical work of formation of critical clusters*, AIP Conf. Proc. 1527 (2013) 39-42.
16. Planková B.[§], Hrubý J., Vinš V.: *Homogeneous droplet nucleation modeled using the gradient theory combined with the PC-SAFT equation of state*, EPJ Web of Conferences 45 (2013) 01076.
17. Vinš V.[§], Jäger A., Hrubý J., Span R.: *Phase equilibria of carbon dioxide and methane gas-hydrates predicted with the modified analytical S-L-V equation of state*, EPJ Web of Conferences 25 (2012) 01098.
18. Vinš V.[§], Hrubý J., Planková B.: *Droplet and bubble nucleation modeled by density gradient theory – cubic equation of state versus SAFT model*, EPJ Web of Conferences 25 (2012) 02028.
19. Labetski D. G.[§], Hrubý J., Vinš V., van Dongen M. E. H.: *Computation of nucleation rates for n-nonane using gradient theory*, Nucleation and atmospheric aerosols, 2007, 97-101.

OTHER CONFERENCE PRESENTATIONS

1. Vinš V.[§], Hykl J., Hrubý J., Hošek J., Fransen M., Šmíd B., Nikl Z.: *Seven years of measurement of the surface tension of supercooled water and aqueous mixtures at IT CAS*, 17th International Conference on the Properties of Water and Steam, Prague (Czech Republic), September 2-6, 2018.
2. Blahut A.[§], Duška M., Hykl J., Peukert P., Vinš V., Čenský M., Hrubý J.: *Measurements of density for supercooled ordinary water, heavy water, and seawater at high pressures*, 17th International Conference on the Properties of Water and Steam, Prague (Czech Republic), September 2-6, 2018.
3. Vinš V.[§], Hykl J., Čenský M., Hrubý J.: *Surface tension of supercooled aqueous mixtures: Preliminary data for mixtures with alcohols and sodium chloride and for seawater*, 20th Symposium on Thermophysical Properties, Boulder (USA) June 24-29, 2018.
4. Hielscher S.[§], Jäger A., Vinš V., Breitkopf C., Hrubý J., Span R.: *A New Model for Mixed Hydrates Consistent with Multiparameter Equations of State*, **invited talk** at 20th Symposium on Thermophysical Properties, Boulder (USA) June 24-29, 2018.

5. Blahut A., Duška M., Hykl J., Peukert P., Vinš V., Čenský M.[§], Hrubý J.: *Dual-capillary apparatus for accurate density measurements of supercooled water*, poster at 20th Symposium on Thermophysical Properties, Boulder (USA) June 24-29, 2018.
6. Hrubý J.[§], Vinš V., Blahut A., Peukert P., Hykl J.: *Supercooled water accurately*, Water X International Workshop, La Maddalena, Sardinia (Italy), June 3-8, 2018.
7. Hielscher S.[§], Jäger A., Vinš V., Breitkopf C., Hrubý J., Span R.: *A new approach to model mixed hydrates consistent with multiparameter equations of state*, 21st European Conference on Thermophysical Properties, Graz (Austria), September 3-8, 2017, doi: 10.3217/978-3-85125-546-1.
8. Planková B.[§], Vinš V., Hykl J., Celný D., Hrubý J.: *Surface tension of ordinary water at low temperatures including supercooled region – New experiments and molecular simulations*, Proceedings of the 20th International Conference on Nucleation and Atmospheric Aerosols, Helsinki (Finland), June 25-30, 2017, ISBN 978-952-7091-85-2.
9. Jäger A.[§], Hielscher S., Vinš V., Hrubý J., Breitkopf C., Span R.: *Fortschritte bei der Modellierung gemischter Hydrate für CCS-relevante Gemische*, Jahrestagung 2017 des Deutschen Nationalen Komitees der International Association for the Properties of Water and Steam IAPWS, Hamburg (Germany), March 17, 2017.
10. Hielscher S.[§], Jäger A., Vinš V., Breitkopf C., Hrubý J., Span R.: *Modellierung komplexer Phasengleichgewichte unter Berücksichtigung der Formation von gemischten Gashydraten*, (poster), Thermodynamik Kolloquium 2016, Kaiserslautern (Germany), October 5-7, 2016.
11. Vinš V.[§], Hošek J., Hykl J., Hrubý J.: *Experimental Data for the Surface Tension of Supercooled Water Measured with a Horizontal Capillary Tube*, Asian Thermophysical Properties Conference (ATPC) 2016, Yokohama (Japan), October 2-4, 2016.
12. Celný D.[§], Vinš V., Hrubý J.: *Mathematical modeling of planar and spherical vapor–liquid phase interfaces for multicomponent fluids*, (poster), ATPC 2016, Yokohama (Japan), October 2-4, 2016.
13. Span R.[§], Gernert J., Hielscher S., Jäger A., Vinš V., Hrubý J.: *An Approach towards an Accurate Description of the System Carbon Dioxide / Water*, (keynote lecture), ATPC 2016, Yokohama (Japan), October 2-4, 2016.
14. Vinš V.[§], Harvey A., Hellmuth O., Holten V., Hrubý J., Kalová J., Mareš R., Pátek J.: *Report of Task Group on Surface Tension of Ordinary Water – 2016*, Annual IAPWS Meeting, Dresden (Germany), September 12, 2016.
15. Hielscher S.[§], Jäger A., Vinš V., Span R., Hrubý J., Breitkopf C.: *Progress in modeling gas hydrates relevant for CCS using reference equations of state and extension of the model for mixed hydrates*, Annual IAPWS Meeting, Dresden (Germany), September 15, 2016.
16. Vinš V.[§], Jäger A., Hrubý J., Span R.: *Hydrate Model for CCS Relevant Gases Compatible with Highly Accurate Equations of State I. Parameter Study and Model Fitting*, 19th Symposium on Thermophysical Properties, Boulder (USA), June 26, 2015.
17. Jäger A.[§], Vinš V., Span R., Hrubý J.: *Hydrate Model for CCS Relevant Gases Compatible with Highly Accurate Equations of State II. Results and Implementation in TREND 2.0*, 19th Symposium on Thermophysical Properties, Boulder (USA), June 26, 2015.
18. Vinš V.[§], Hošek J., Hykl J., Hrubý J.: *Surface tension of supercooled water down to – 22 °C measured with a horizontal capillary tube*, 19th Symposium on Thermophysical Properties Boulder (USA), June 24, 2015.
19. Jäger A.[§], Vinš V.[§], Span R., Hrubý J.: *The lattice parameter of gas hydrates – a new model and its influence on van der Waals and Platteeuw type hydrate model*, Thermodynamik Kolloquium 2014, Stuttgart (Germany), September 22-24, 2014.
20. Vinš V.[§], Jäger A.[§], Gernert J., Span R., Hrubý J.: *Phase equilibria involving solids – Aqueous mixtures with gas hydrates*, IMPACT Meeting, January 29, 2013, Bochum (Germany).
21. Kretzschmar H.-J.[§], Kunick M.[§], Hrubý J., Duška M., Vinš V., di Mare F., Singh A.: *Proposal for an IAPWS guideline on the fast calculation of steam and water properties in computational fluid dynamics using spline interpolation*, 16th ICPWS 2013, London, September 2013.
22. Jäger A.[§], Vinš V.[§], Span R., Hrubý J.: *Prediction of gas hydrates in CCS relevant mixtures with reference equations of state, invited lecture* at the 16th ICPWS 2013, London, September 2, 2013.

23. Vinš V.[§], Hrubý J., Fransen M., Hykl J., Šmíd B., Hošek J.: *Modification of an experimental apparatus and new measurement of the surface tension of supercooled water*, 16th ICPWS 2013, London, September 5, 2013.
24. Vinš V.[§], Jäger A., Gernert J., Span R., Hrubý J.: *Progress in modeling H₂O + CO₂ mixture with gas hydrate formation*, Annual IAPWS Meeting 2012, Boulder (USA).
25. Vinš V.[§], Hrubý J., Hykl J.: *Measurement of surface tension of supercooled water*, Annual IAPWS Meeting 2012, Boulder (USA).
26. Jäger A.[§], Vinš V., Gernert J., Span R., Hrubý J.: *Phase equilibria with hydrate formation in H₂O + CO₂ mixtures modeled with reference equations of state*, 18th Symposium on Thermophysical Properties, June 24-29, 2012, University of Colorado at Boulder (USA).
27. Vinš V.[§], Jäger A., Gernert J., Span R., Hrubý J.: *Development of thermodynamic models for hydrates in water-carbon dioxide mixture*, Annual IAPWS Meeting, Pilsen (CZ), September 2011.
28. Vinš V.[§], Hrubý J., Planková B.: *Surface tension of binary mixtures including polar components modeled by the density gradient theory combined with the PC-SAFT equation of state*, 19th European Conference on Thermophysical Properties, 28 Aug-1 Sep 2011, Thessaloniki, Greece.
29. Vinš V.[§], Vacek V.: *Two-Phase Flow Analyses during Throttling Process*, 18th European Conference on Thermophysical Properties, 31 Aug-4 Sep 2008, Pau, France.
30. Vinš V.[§], Vacek V.: *Effect of Gas Impurities on Throttling Process of Fluorocarbon Refrigerants: Estimation of Henry Constant*, 20th International Conference on Chemical Thermodynamics, August 3-8 2008, Warsaw, Poland.
31. Vacek V.[§], Vinš V., Marek R., Doubrava M., Galuška M.: *Feasibility study and pilot testing of the evaporative cooling circuit for TOTEM experiment*, Proceedings of Workshop 2008, CTU Reports, Special issue, Part A - Vol. 12, February 2008, ISBN 978-80-01-04016-4, pp. 58-59.
32. Vacek V.[§], Vinš V., Marek R., Doubrava M.: *A new commissioning test with repaired SCT Barrel loops in the ATLAS experimental cavern*, Proceedings of Workshop 2008, CTU Reports, Special issue, Part A - Vol. 12, February 2008, ISBN 978-80-01-04016-4, pp. 72-73.
33. Vacek V.[§], Vinš V., Doubrava M.: *Testing of the Repaired Heaters for ATLAS Inner Detector Cooling Loops*, Proceedings of Workshop 2008, CTU Reports, Special issue, Part A - Vol. 12, February 2008, ISBN 978-80-01-04016-4, pp. 74-75.
34. Vinš V.[§], Vacek V., Srovátka V., Marek R.: *Experimental investigation of the flow through small diameter tube*, Proceedings of Workshop 2008, CTU Reports, Special issue, Part B - Vol. 12, February 2008, ISBN 978-80-01-04016-4, pp. 348-349.
35. Vinš V.[§], Vacek V.: *Experimental investigation of the refrigerant flow through copper-nickel small bore tubes*; Proceedings of Workshop 2007, CTU Reports, Special issue, Part B - Vol. 11, February 2007, Prague, ISBN 978-80-01-03667-9, pp.392-393.
36. Vinš V.[§], Vacek V.: *Capillary flow models and their experimental verification within the cooling circuit working with fluorinert refrigerant*; Proceedings of Workshop 2006, CTU Reports, Special issue, Part B - Vol. 10, February 2006, Prague, ISBN 80-01-03439-9, p.442-443.
37. Vacek V.[§], Vinš V.: *A study of the flow through capillary-tube tunned up for the cooling circuit with fluorinert refrigerants*; 17th European Conference on Thermophysical Properties, September 5-8, 2005, Bratislava.
38. Vinš V.[§], Vacek V.: *Study of the flow through capillary-tube*; Proceedings of Workshop 2005, CTU Reports, Special issue, Part A - Vol. 9, March 2005, Prague, ISBN 80-01-03201-9, p.154-155.
39. Vacek V.[§], Vinš V.: *Comments about Hex and Capillaries performance ID Cooling circuit*; Pixel service meeting at CERN, June 2004, Geneva, p. 14.
40. Vinš V.[§], Vacek V., Doubrava M., Galuška M.: *Study of the cooling system with fluorinert refrigerants*; Proceedings of Workshop 2004, CTU Reports, Special issue, Part b - Vol. 8, March 2004, Prague, ISBN 80-01-02945-X, p.640-641.
41. Vacek V.[§], Vinš V., Galuška M.: *Modification of the cooling system in view of the prototype test*; Pixel Mechanics Meeting at CERN, September 2003, Geneva, p. 13.

42. Vacek, V.[§], Vinš, V., Doubrava, M., Galuška, M.: *DAQ and DCS sensors database, Capillary studies and Thermophysical property Database for the C.S. applications at SR Bldg.*; Pixel Mechanics Meeting at CERN, February 2003, Geneva, p.12.
43. Vacek, V., Vinš, V.[§], Novák, R.: *An upgrade of the calibration setups for the DAQ systems*; Proceedings of the Workshop 2003, CTU Reports, Special Issue, Part B February 2003 Prague, p. 420-442.
44. Vacek, V.[§], Vinš, V., Doubrava, M.: *Temperature & pressure sensors and capillaries studies for ATLAS ID COOLING SYSTEM*; Pixel Mechanics meeting at CERN October 2002, Geneva, p. 10.
45. Vacek, V.[§], Vinš, V., Novák, R.: *Mobile DAQ system and its application for temperature, pressure and flow monitoring*; CTU Reports Proceedings of WORKSHOP 2002 Part A, Prague 2002, ISBN 80-01-02511-X, p. 341-342.

TECHNICAL REPORTS

1. Hrubý J., Bauer P., Jurčáková K., Kordík J., Němec T., Vinš V.: *Predictive model of persistency of nerve agents* (research report in Czech), Z-1459/10 Institute of Thermomechanics of the CAS, Prague (CZ), 2010
2. Bauer P., Hrubý J., Jurčáková K., Kordík J., Vinš V.: *Development and verification of mathematical model for persistency of nerve agents in terrain* (research report in Czech), Z-1442/09 Institute of Thermomechanics of the CAS, Prague (CZ), 2009
3. Vins V.: *Thermal and flow behaviour of the ALICE muon spectrometer tracking station 1 and 2 environment*, CERN, 2005, <https://edms.cern.ch/document/686735/1>
4. Vins V.: *Thermal behaviour of the LHCb PS VFE board*, CERN, 2005, <https://edms.cern.ch/document/685527/2>
5. Vins V., Eicher S.C.: *CFD study of temperature in power cables*, CERN, 2005, <https://edms.cern.ch/document/681592/1>

OTHER

Memberships in Scientific Associations

- Member of the International Association for the Properties of Water and Steam (IAPWS); namely of the Thermophysical Properties of Water and Steam (TPWS) Working Group (<http://www.iapws.org/>)
- Member of the Czech Society for the Properties of Water and Steam (<http://czpws.cz/en>).

Review activities

Reviewer of app. 45 scientific articles in impacted journals, e.g., International Journal of Thermophysics, International Journal of Refrigeration, Journal of Chemical & Engineering Data, Fluid Phase Equilibria

Awards

- Publication J. Hrubý, V. Vinš, R. Mareš, J. Hykl, J. Kalová: *J. Phys. Chem. Lett.* 5 (2014) 425–428 was selected as the most valuable results of the Institute of Thermomechanics of the CAS achieved in 2014.
- First place in doctoral section D2 at the conference “Studentská tvůrčí činnost” held in April 20, 2006 at the Faculty of Mechanical Engineering at CTU in Prague for the presentation *Design of the capillary tube for the cooling industry use*.
- First place in the 11th competition of the M.Sc. thesis of Zvoníček foundation at the Faculty of Mechanical Engineering at CTU in Prague in the category theoretical fundamentals of the mechanical engineering for the work *Modely proudění kapilárou* (in Czech).