List of Publications

Peer Reviewed Journals

22. C. **Ates**, T. Höfchen, M. Witt, R. Koch, H.-J. Bauer, Vibration-based Wear Condition Estimation of Journal Bearings Using Convolutional Autoencoders, Sensors, Vol. 23(22), 9212, 2023 (Q1).

21. J. Arweiler, C. **Ates**, J. Cerquides, R. Koch, H.-J. Bauer, Similarity-Based Framework for Unsupervised Domain Adaptation: Peer Reviewing Policy for Pseudo-Labeling, MAKE, Vol. 5, 1474, 2023 (Q1).

20. M. Wicker, C. **Ates**, M. Okraschevski, S. Holz, R. Koch, H.-J. Bauer, Modeling Multivariate Spray Characteristics with Gaussian Mixture Models, Energies, Vol. 16, 6818, 2023 (Q1).

19. C. **Ates**, D. Bicat, R. Yankov, J. Arweiler, R. Koch, H.-J. Bauer, Model Predictive Evolutionary Temperature Control via Neural-Network-Based Digital Twins, Algorithms, Vol. 16, 387, 2023 (Q2).

18. C. **Ates**, J. Arweiler, H. Hadad, R. Koch, H.-J. Bauer, Secondary Motion of Non-spherical Particles in Gas-Solid Flows, Processes, Vol. 11, 1369, 2023 (Q2).

17. C. **Ates**, C. Gundogdu, M. Okraschevski, N. Bürkle, R. Koch, H.-J. Bauer. Characterization of Flow-Blurring Atomization with Smoothed Particle Hydrodynamics (SPH), International Journal of Multiphase Flow, Vol. 164, 104442, 2023 (Q1).

16. C. **Ates**, F. Karwan, M. Okraschevski, R. Koch, H.-J. Bauer, Conditional Generative Adversarial Networks for Modelling Fuel Sprays, Energy and AI, Vol. 12, 100216, 2023. (Q1).

15. O. Schumacher, C. **Ates**, M. Börnhorst, R. Koch, P. Stephan, Deposit formation from evaporating urea-water droplets on substrates of different wettability, Journal of Colloid and Interface Science , Vol. 634, 1-13, 2023 (Q1).

14. C. **Ates**, M. Börnhorst, R. Koch, M. Eck, O. Deutschmann, H.-J. Bauer, Morphological characterization of urea derived deposits in SCR systems, Chemical Engineering Journal, Vol. 409, 128230, 2021 (Q1).

13. J. Dörnhöfer, M. Börnhorst, C. **Ates**, N. Samkhaniani, J. Pfeil, M. Wörner, R. Koch, H.-J. Bauer, O. Deutschmann, B. Frohnapfel, T. Koch, A Holistic View on Urea Injection for NOx Emission Control: Impingement, Re-atomization, and Deposit Formation, Emission control science and technology, 6, 228–243, 2020 (Q2).

12. G. Chaussonnet, T. Dauch, M. Keller, M. Okraschevski, C. **Ates**, C. Schwitzke, R. Koch, H.-J. Bauer, Progress in the Smoothed Particle Hydrodynamics Method to Simulate and Post-process Numerical Simulations of Annular Airblast Atomizers, Flow, Turbulence and Combustion, Vol. 105, pp. 1119–1147, 2020 (Q1).

11. T.F. Dauch, C. **Ates**, T. Rapp, M.C. Keller, G. Chaussonnet, J. Kaden, M. Okraschevski, R. Koch, C. Dachsbacher, H.-J. Bauer, Analyzing the Interaction of Vortex and Gas–Liquid Interface Dynamics in Fuel Spray Nozzles by Means of Lagrangian-Coherent Structures (2D), Energies, Vol. 12, 2552, 2019 (Q1).

10. G. Ozen, C. **Ates**, N. Selçuk, G. Kulah, "Assessment of SLW-1 Model in the Presence of Gray and Nongray Particles", International Journal of Thermal Sciences, Vol. 136, pp. 420-432, 2019 (Q1).

9. C. **Ates**, N. Selçuk, G. Kulah, Influence of gray particle assumption on the predictive accuracy of gas property approximations, . Quant. Spectrosc. Radiat. Transfer, Vol. 220, pp. 67-83, 2018 (Q1).

8. C. **Ates**, N. Selçuk, G. Kulah, Influence of Fly Ash Composition on Non-Gray Particle Radiation in Combusting Systems, J. Quant. Spectrosc. Radiat. Transfer, Vol. 215, pp. 25-40, 2018 (Q1).

7. C. **Ates**, G. Ozen, N. Selçuk, G. Kulah, Assessment of Gas Radiative Property Models in the Presence of Non-Gray Particles, Numerical Heat Transfer, Part A: Applications, Vol. 73, pp. 385-407, 2018 (Q1).

6. C. **Ates**, N. Selçuk, G. Kulah, Significance of Particle Concentration Distribution on Radiative Heat Transfer in Circulating Fluidized Bed Combustors, International Journal of Heat and Mass Transfer, Vol. 117, pp. 58-70, 2018 (Q1).

5. C. **Ates**, N. Selçuk, G. Kulah, Effect of Changing Biomass Source on Radiative Heat Transfer During Co-Firing of High-Sulfur Content Lignite in Fluidized Bed Combustors, Applied Thermal Engineering, Vol.128, pp.539–550, 2018 (Q1).

4. C. **Ates**, N. Selçuk, G. Kulah, Effect of Limestone Addition on Radiative Heat Transfer during CoFiring of High-Sulfur Content Lignite with Biomass in Fluidized Bed Combustors, Combustion Science and Technology, Vol.190:8, pp. 1377-1391, 2018 (Q1).

3. C. **Ates**, O. Sen, N. Selçuk, G. Kulah, Influence of Spectral Particle Properties on Radiative Heat Transfer in Optically Thin and Thick Media of Fluidized Bed Combustors, International Journal of Thermal Sciences, Vol. 122, pp. 266-280, 2017 (Q1).

2. C. **Ates**, N. Selçuk, G. Ozen, G. Kulah, Benchmarking grey particle approximations against nongrey particle radiation in circulating fluidized bed combustors, Numerical Heat Transfer, Part B: Fundamentals, 71:5, 467-484, 2017 (Q2).

1. C. **Ates**, G. Ozen, N. Selçuk, and G. Kulah, Radiative Heat Transfer in Strongly Forward Scattering Media of Circulating Fluidized Bed Combustors, J. Quant. Spectrosc. Radiat. Transfer, vol. 182, pp. 264–276, 2016 (Q1).

Peer Reviewed Book Chapters

3. K.V. Muthukumar, M. Okraschevski, N. Bürkle, D.M. Aguirre Bermudez, M. Haber, R. Koch, H.-J. Bauer, C. **Ates**. Modeling the Gas Liquid Interface of Falling Film Reactors in Fully Developed Flow Regime. In: High Performance Computing in Science and Engineering '22, accepted, Springer, Cham.

2. T. F. Dauch, G. Chaussonnet, M. C. Keller, M. Okraschevski, C. **Ates**, R. Koch, H.-J. Bauer. 3D Predictions of the Primary Breakup of Fuel in Spray Nozzles for Aero Engines. In: Nagel W.E., Kröner D.H., Resch M.M. (eds) High Performance Computing in Science and Engineering '20. Springer, Cham.

1. G. Chaussonnet, T. Dauch, M. Keller, M. Okraschevski, C. **Ates**, C. Schwitzke, R. Koch, H.-J. Bauer. Influence of the Flow Physics on the Load Balancing During SPH Simulations. In: Nagel W.E., Kröner D.H., Resch M.M. (eds) High Performance Computing in Science and Engineering '19. Springer, Cham.

Peer Reviewed Conference Proceedings

9. J. Arweiler, C. **Ates**, J. Cerquides, R. Koch, H.-J. Bauer,Similarity-Based Framework for Unsupervised Domain Adaptation: Peer Reviewing Policy for Pseudo-Labeling, HelmholtzAI Conference, 11-14 June, Hamburg, Germany, 2023.

8. K.V. Muthukumar, C. **Ates**, A. Düll, F. Öhl, T. Häber, O. Deutschmann, R. Koch, H.-J. Bauer. Interface enhancement with textured surfaces in thin-film flows, Proceedings of the 17th SPHERIC International Workshop, Rhodes, Greece, 27-29 June 2023.

7. C. **Ates**, F. Karwan, M. Okraschevski, R. Koch and H.-J. Bauer, Generative Adversarial Networks for Modelling Fuel Sprays, Proceedings of Tenth Mediterranean Combustion Symposium, January 23-26, Luxor, Egypt, 2023.

6. C. **Ates**, K.V. Muthukumar, M. Okraschevski, N. Bürkle, D.M. Aguirre Bermudez, M. Haber, R. Koch, H.-J. Bauer. Thin Film Flow Dynamics in Gas-Liquid Contact Reactors, Proceedings of the 16th SPHERIC International Workshop, Catania, Italy, June 7-9, 2022.

5. C. **Ates**, V. Giovannoni, N. Bürkle, M. Keller, M. Okraschevski, R. Koch, H.-J. Bauer, Analysis of the Backflow Recirculation in Flow Blurring Nozzles via Lagrangian Coherent Structures, CLASS 2021, 15thTriennial International Conference on Liquid Atomization and Spray Systems, Edinburgh, UK, 29 Aug. - 2 Sept. 202, 2021.

4. G. Chaussonnet, T. Dauch, M. Keller, M. Okraschevski, C. **Ates**, C. Schwitzke, R. Koch, H.-J. Bauer, Progress in the Smoothed Particle Hydrodynamics method to simulate and post-process spray generation, 10th International Conference on Multiphase Flow, Rio de Janeiro, BR, May 19-24, 2019.

3. T.F. Dauch, C. **Ates**, T. Rapp, M.C. Keller, G. Chaussonnet, J. Kaden, M. Okraschevski, R. Koch, C. Dachsbacher, H.-J. Bauer, Analyzing Primary Breakup in Fuel Spray Nozzles by Means of Lagrangian-Coherent Structures, Proceedings of the 14th SPHERIC International Workshop, Exeter, UK, June 25-27, 120–127, 2019.

2. C. **Ates**, N. Selçuk, G. Kulah, Influence of Spectral Particle Properties on the Predictive Accuracy of Gas Property Approximations, Radiative Transfer in Combustion Systems, Proceedings of Computational Thermal Radiation in Participating Media VI, April 11-13, Lisbon, Portugal, 2018.

1. C. **Ates**, N. Selçuk, G. Kulah, Effect of Limestone Addition on Radiative Heat Transfer during Co-Firing of High-Sulfur Content Lignite with Biomass in Fluidized Bed Combustors, Combustion Diagnostics CD-03, Proceedings of Tenth Mediterranean Combustion Symposium, September 17-21, Naples, Italy, 2017.

Invited Lectures and Presentations

8. C. **Ates**, Modeling fuel droplet statistics with Generative Machine Learning, Annual Combustion & Turbines German UTC & DLR, Karlsruhe, 2023.

7. C. **Ates**, How the brain learns and why adaptive models matter, KCDS Talks, KIT, Karlsruhe, 2023.

6. C. **Ates**, Machine Intelligence in Turbomachinery, Annual Combustion & Turbines German UTC & DLR, Göttingen, 2022.

5. C. **Ates**, R. Koch, H.-J. Bauer, Influence of Spectral Particle Properties on Radiative Heat Transfer in Combusting Systems, 17th International Conference on Numerical Combustion, Aachen, Germany, 6–8 May 2019 (invited lecture).

4. T. F. Dauch, T. Rapp, C. **Ates**, Interactive Exploration of SPH-Datasets by means of postAtom, 3. Süddeutscher SPH-Workshop, Karlsruhe, 2018.

3. A. Calisan, C. **Ates**, S. Kincal, and D. Uner, Using nonstoichiometric Co-Pb mixed metal oxides for solar thermal synthesis of hydrogen and CO, 249th ACS National Meeting, Chicago, 2014.

2. C. **Ates**, and D. Uner, Characterization of Adsorption-Desorption Properties of O_2 on Cobalt Oxides, Fifth National Catalysis Conference, Adana, Turkey, 2014.

1. C. **Ates**, and D. Uner, Terephthalic Acid Production & Rate Enhancement via Three Phase Modelling, 1st Catalysis Summer School, Malatya, Turkey, 2013.