

Journal publications

1. J. Simonsson, N.-E. Olofsson, S. Török, P.-E. Bengtsson, H. Bladh, Wavelength dependence of extinction in sooting flat premixed flames in the visible and near-infrared regimes, *Applied Physics B* 119, pp 657-667
2. N.-E. Olofsson, J. Simonsson, S. Török, P.-E. Bengtsson, H. Bladh, Evolution of properties for aging soot in premixed flat flames studied by laserinduced incandescence and elastic light scattering, *Applied Physics B* 119, pp 669-683
3. H. Wiinikka, A.C Johansson, J Wennebro, P. Carlsson, O.G.W. Öhrman, Evaluation of black liquor gasification intended for synthetic fuel or power production, *Fuel Processing Technology*, 139, pp 216-225
4. A. K. Biswas, K. Umeki, Simplification of devolatilization models for thermally-thick particles: Differences between wood logs and pellets, *Chemical Engineering Journal*, 274, pp 181-191
5. M. Risberg, P. Carlsson, R. Gebart, Numerical modeling of a 400 kW air-blown cyclone gasifier, *Applied Thermal Engineering*, 90, pp 694-702
6. A. Bach-Oller, E. Furusjö, K. Umeki, Fuel conversion characteristics of black liquor and pyrolysis oil mixtures: Efficient gasification with inherent catalyst, *Biomass and Bioenergy* 79, pp 155-165
7. M. Kuba, H. He, F. Kirnbauer, D. Boström, M. Öhman, H. Hofbauer, Deposit build-up and ash behavior in dual fluid bed steam gasification of logging residues in an industrial power plant, *Fuel Processing Technology*, 139, pp 33-41
8. E. Amer, P. Gren, M. Sjö Dahl, Stimulated Raman scattering signals recorded by the use of an optical imaging technique, *Applied Optics*, 54, pp 6377-6385
9. C. Ma, R. Backman, M. Öhman, Thermochemical Equilibrium Study of Slag Formation during Pressurized Entrained-Flow Gasification of Woody Biomass, *Energy & Fuels*, 29, pp 4399-4406
10. J. Andersson, J. Lundgren J, E. Furusjö, I Landälv, Co-gasification of pyrolysis oil and black liquor for methanol production. *Fuel*, 158, pp 451-459
11. A. Alamia, H. Ström, H. Thunman, Design of an integrated dryer and conveyor belt for woody biofuels, *Biomass and Bioenergy*, 77, pp 92-109

12. A. Larsson, H. Ström, S. Sasic, H. Thunman, Experimental and numerical investigation of the dynamics of loops seals in a large-scale DFN system under hot conditions, *AIChE Journal* (0001-1541), 61, pp 3580–3593
13. K. Qin, H. Thunman. Diversity of chemical composition and combustion reactivity of various biomass fuels, *Fuel* 147, pp 161-169
14. E. Sette, D. Pallarès, F. Johnsson, F. Ahrentorp, A. Ericsson, C. Johansson. Magnetic tracer-particle tracking in a fluid dynamically down-scaled bubbling fluidized bed, *Fuel Processing Technology* 138, pp 368-377
15. J. Marinkovic, H. Thunman, P. Knutsson, M. Seemann, Characteristics of olivine as a bed material in an indirect biomass gasifier, *Chemical Engineering Journal* 279, pp 555-566
16. M. Keller, H. Leion, H. Mattisson, Use of CuO, MgAl₂O₄ and La_{0.8}Sr_{0.2}FeO₃, γ -Al₂O₃ in CLR system for tar removal from gasification gas, *Particle Technology and Fluidization*, 62 (1), pp 38–45
17. P. A. Tchoffor, K. O. Davidsson, H. Thunman, Production of activated carbon within the dual fluidized bed gasification process, *Industrial and Engineering Chemistry Research*, 54 (15), pp 3761–3766
18. T. Berdugo Vilches, H. Thunman, Experimental investigation of volatiles-bed contact in a 2-4 MW_{th} bubbling bed reactor of a dual fluidized bed gasifier, *Energy and Fuels* 29 (10), pp 6456–6464
19. E. Sette, D. Pallarès, F. Johnsson, Influence of bulk solids cross-flow on lateral mixing of fuel in dual fluidized beds, *Fuel Processing Technology* 140, pp 245–251
20. M. Israelsson, T. Berdugo Vilches, H. Thunman, Conversion of condensable hydrocarbons in a dual fluidized bed biomass gasifier, *Energy and Fuels* 29 (10), pp 6465–6475
21. M. Keller, H. Leion, H. Mattisson, Chemical Looping Tar Reforming using La/Sr/Fe-containing mixed oxides supported on ZrO₂, *Applied Catalysis B: Environmental* 183, pp 298–307
22. K. Göransson, U. Söderlind, P. Engstrand, W. Zhang. An experimental study on catalytic bed materials in a biomass dual fluidized bed gasifier. *Renewable Energy* 81, pp 251–261
23. L. N. Samuelsson, R. Moriana, M. U. Babler, M. Ek, K. Engvall, Model-free rate expression for thermal decomposition processes: The case of microcrystalline cellulose pyrolysis, *Fuel* 143, pp 438–447

24. P.H Moud, K.J. Andersson, R.Lanza, J.B.C. Pettersson, K. Engvall, Effect of gas phase alkali species on tar reforming catalyst performance: Initial characterization and method development, *Fuel* 154, pp 95–106
25. R. Sadegh-Vaziri, M. Amovic, R. Ljunggren, K. Engvall, A Medium-Scale 50 MW_{fuel} Biomass Gasification Based Bio-SNG Plant: A Developed Gas Cleaning Process, *Energies*, 8, pp 5287-5302
26. L.N. Samuelsson, M.U. Babler, R. Moriana, A single model-free rate expression describing both non-isothermal and isothermal pyrolysis of Norway Spruce, *Fuel* 161, pp 59–67
27. J. Li, G. Bonvicini, E. Biagini, W. Yang, L. Tognotti, Characterization of high-temperature rapid char oxidation of raw and torrefied biomass fuels. *Fuel*, 143, pp 492-498
28. P. Tunå, H. Svensson, J. Brandin, Modelling of a reverse-flow partial oxidation reactor for synthesis gas production from gasifier product gas, *Journal of Computational Methods in Sciences and Engineering* 15, pp 593-604
29. C. Parsland, A-C Larsson, P. Benito, G. Fornasari, J. Brandin, Nickel-substituted bariumhexaaluminates as novel catalysts in steam reforming of tars, *Fuel Processing Technology* 140, pp 1-11
30. M. Morgalla, L. Lin, M. Seemann, M. Strand, Characterization of particulate matter formed during wood pellet gasification in an indirect bubbling fluidized bed gasifier using aerosol measurement techniques, *Fuel Processing Technology* 138, pp 578–587
31. J. Falk, R.J. Berry, M. Broström, S. Larsson, Mass flow and variability in screw feeding of biomass powders: relations to particle and bulk properties, *Powder Technology* 276, pp 80-88
32. K. Åberg, L. Pommer, A. Nordin, Syngas Production by Combined Biomass Gasification and in Situ Biogas Reforming, *Energy & Fuels* 29 (6), pp 3725–3731
33. Z. Qu, R. Ghorbani, D. Valiev, F.M. Schmidt, Calibration-Free scanned wavelength modulation spectroscopy—application to H₂O and temperature sensing in flames, *Optics Express* 23 (12), pp. 16492-16499
34. Z. Qu, F.M. Schmidt, In situ H₂O and temperature detection close to burning biomass pellets using calibration-free wavelength modulation spectroscopy, *Applied Physics B* 119 (1), pp 45-53

Conference articles

1. Sette E et al. Camera-Probe Fuel Tracking Under Industrial Fluidized-Bed Conditions. 22nd FBC. 2015/06.
2. Pallarès D et al. 3-Dimensional Magnetic Particle Tracking in a Fluid-Dynamically Downscaled Bubbling Fluidized Bed. 22nd FBC. 2015/06.
3. Berdugo Vilches et al. Behaviour of biomass particles in a large scale (2–4MWth) bubbling bed reactor. Computational Methods in Multiphase Flow VIII. 2015/06.
4. Sette E et al. 3-dimensional particle tracking in a fluid-dynamically downscaled fluidized bed using magneto resistive sensors. 8th International Symposium on Coal Combustion, Beijing China. 2015/07.
5. Lundberg L et al. Determination of Kinetic Parameters for the Gasification of Biomass Char Using a Bubbling Fluidised Bed Reactor. 22nd FBC. 2015/06.
6. Tchoffor P et al. Release of K, Cl, and S during biomass gasification. Nordic Flame Days. 2015/10.
7. Pushp M et al. Measurements with FTIR using hot cell in tar-laden gas. Nordic Flame Days. 2015/10.
8. Larsson A et al. Monitoring the Bed Material Activation in the GoBiGas-Gasifier.
9. Tchoffor P et al. Release of K, Cl, and S during biomass gasification. Nordic Flame Days. 2015/10.
10. J. Simonsson, H. Bladh, H. Wiinikka, P.-E. Bengtsson, Laser diagnostic measurements of soot in gasification, 14th International Congress on Combustion By-Products and Their Health Effects, June 14-17, Umeå, Sweden, 2015.
11. P.-E. Bengtsson, Laser-based diagnostics for reactive flows with special emphasis on soot measurements, 14th International Congress on Combustion By-Products and Their Health Effects, June 14-17, Umeå, Sweden, 2015.
12. H. Bladh, J. Simonsson, N.-E. Olofsson, M. Sanati, P.-E. Bengtsson, Soot formation in presence of metal additives: A laser-based study in premixed flames using LII, scattering and extinction, GRC Research Conference on Laser diagnostics in combustion, Waterville Valley Resort, Waterville Valley, NH, USA, August 9-14, 2015.
13. J. Simonsson, N.-E. Olofsson, S. Török, H. Bladh, P.-E. Bengtsson, Optical and physical properties of soot determined using extinction, laser-induced incandescence and elastic light

scattering, GRC Research Conference on Laser diagnostics in combustion, Waterville Valley Resort, Waterville Valley, NH, USA, August 9-14, 2015.

14. K. Umeki, M. Risberg, Improving the performance of CFD simulation for entrained flow biomass gasifiers by considering intra-particle mass and heat transfer, tcbiomass 2015, Chicago, USA, November 2015.
15. B. Göktepe, A. Hazim, K. Umeki, T. S. Lundström, R. Gebart, Effect of acoustic waves on soot formation in pulverised biomass burner, Nordic Flame Days 2015, Copenhagen, Denmark, October 2015.
16. E. Furusjö ; K. Kirtania ; Y. Jafri ; A. Bach Oller ; K. Umeki ; J. Lundgren ; E. Wetterlund ; I. Landälv ; R. Gebart ; E. Pettersson, Co-gasification of pyrolysis oil and black liquor - a new track for production of chemicals and transportation fuels from biomass. tcbiomass 2015, Chicago, USA, November 2015.
17. "Alkali uptake studies under realistic conditions on a sulfur equilibrated Nickel based tar reforming catalyst". Poster presented at the 24th North American Catalysis Society Meeting NAM24, , Pittsburgh, Pennsylvania, US. 2015/06
18. "Study on char fragmentation during biomass gasification in bubbling fluidized bed". 23rd European Biomass Conference and Exhibition, Vienna, Austria. 2015/06
19. "Design and Construction of a Reactor for Autothermal Reforming of Biomass Tar". Poster presented at the 23rd European Biomass Conference and Exhibition, Vienna, Austria. June 2015/06
20. "Design, Modelling and Operation of a Burner for Partial Combustion of Biomass Product Gas". Oral presentation at Nordic Flame Days 2015, Copenhagen, Denmark. 2015/10
21. "Characterization Of Particulate Matter In Biomass Gasification. European Biomass Conference and Exhibition, Vienna, Austria. 2015/06