

Publikationer om Säker bränslelagring

Följande lista innehåller rapporter och artiklar inom området bränslelagring med relation till arbete utfört på RISE (inklusive SP).

2021

Huang, Chen. and Andrei N. Lipatnikov. Modelling of premixed turbulent combustion of cornflour dust-air cloud using OpenFOAM. in 38th International Symposium on Combustion, Work in Progress Poster. 2021. Adelaide, Australia.

Huang, Chen and Andrei N. Lipatnikov. Modelling of a vented corn starch dust explosion using an open source code. Global Dust Safety Conference 2021, oral presentation. March 1-3, 2021.

2020

Fjellgaard Mikalsen, R., Lönnermark, A., Glansberg, k., and McNamee, M., "Fire in waste facilities: Challenges and solutions from a Scandinavian perspective", Fire Safety Journal, Available online 14 May 2020.

Huang, Chen, Andrei N. Lipatnikov, and Ken Nessvi. "Unsteady 3-D RANS simulations of dust explosion in a fan stirred explosion vessel using an open source code." Journal of Loss Prevention in the Process Industries 67 (2020): 104237.

Huang, Chen and Andrei N. Lipatnikov. "Modelling of cornflour dust explosion using an open source code". in Digital Dust Safety Conference 2020, oral presentation. February 24 - 28, 2020.

2019

Gehandler, J., and Lönnermark, A., "CNG vehicle containers exposed to local fires", RISE Research Institutes of Sweden, RISE Report 2019:120, 2019.

Lönnermark, A., Persson, H., Hedenstedt, A., Jones, F., Davidsson, K., and Johansson, I., "Rekommendation för ett proaktivt brandskyddsarbete", Avfall Sverige, Rapport 2019:16, 2019.

2018

Lönnermark, A., "Brandsäker energilagring - Sammanställning av risker och forskningsbehov", RISE Research Institutes of Sweden, RISE Rapport 2018:42, 2018.

Lönnermark, A., Persson, H., Trella, F., Blomqvist, P., Boström, S., and Bergérus Rensvik, Å., "Brandsäkerhet i samband med lagring av avfallsbränslen", Avfall Sverige, Rapport 2018:09, 2018.

Sedlmayer, I., Arshadi, M., Haslinger, W., Hofbauer, H., Larsson, I., Lönnermark, A., Nilsson, C., Pollex, A., Schmidl, C., Stelte, W., Wopienka, E., and Bauer-Emhofer, W., "Determination of off-gassing and self-heating potential of wood pellets - Method comparison and correlation analysis", Fuel, <https://doi.org/10.1016/j.fuel.2018.07.117>, 234, 894-903, 2018.

Lönnermark, A., Pushp, M., Bemlar, J., Tabernan, S.-O., Johnsson, A., and Persson, H., "Metod för karaktärisering av självuppvärmning av olika avfallsfraktioner", RE:SOURCE, 2018.

2017

Larsson, I., Lönnermark, A., Blomqvist, P., and Persson H., "Measurement of self-heating potential of biomass pellets with isothermal calorimetry", *Fire and Materials*, <https://doi.org/10.1002/fam.2441>, 0, p.1-9, 2017.

Larsson, I., Lönnermark, A., Blomqvist, P., Persson, H., and Bohlén, H., "Development of a screening test procedure based on isothermal calorimetry for determination of self-heating potential of biomass pellets", *Fire and Materials*, <https://doi.org/10.1002/fam.2427>, 0, p.1-13, 2017.

Andersson, J., Sjöström, J., Lönnermark, A., and Persson, H., "Assessment of the Self-Heating in Wood Pellets by FE Modelling", 12th International Symposium on Fire Safety Science, Lund, Sweden, June 12–16, 2017.

Larsson, I., "Measurement of Self-Heating of Biomass Pellets using Isothermal Calorimetry", Licentiate Thesis, Karlstads Universitet, 2017.

2016

Lönnermark, A., and Larsson, I., "How to assess the propensity for self-heating", Nordic Fire & Safety Days 2016, Copenhagen, Denmark, June 16th - 17th, 2016.

2014

Larsson, I., Lönnermark, A., Persson, H., and Blomqvist, P., "Temperature Measurements and Examination of Self-Heating in Large Scale storage of Wood Pellets", World Bioenergy 2014, p.233-237, Jönköping, Sweden, 3-5 June, 2014.

Persson, H., Leandersson, A., Amen, M., and Lönnermark, A., "Lagring av biobränsle och avfall – Statistik och erfarenhet från incidenter och bränder", SP Technical Research Institute of Sweden, SP Report 2014:55, Borås, Sweden, 2014.

Persson, H., Leandersson, A., Amen, M., and Lönnermark, A., "Lagring av biobränsle och avfall – Statistik och erfarenheter från incidenter och bränder – Summerande rapport", SP Technical Research Institute of Sweden, SP Report 2014:67, Borås, Sweden, 2014.

Sjöström, J., and Blomqvist, P., "Direct measurements of thermal properties of wood pellets: Elevated temperatures, fine fractions and moisture content", *Fuel*, 134, 460-466, 2014.

2013

Persson, H., "Silo fires: fire extinguishing and preventive and preparatory measures", Swedish Civil Contingencies Agency (MSB), <https://www.msb.se/RibData/Filer/pdf/27144.pdf>, 2013.

Larsson, I., Lönnermark, A., Blomqvist, P., Persson, H., and Rahm, M., "Small scale screening tests to assess the self-heating potential of wood pellets", Interflam – 13th National Fire Science & Engineering Conference, p.623-628, Royal Holloway College University of London, UK, 2013.

Larsson, I., Persson, H., Lönnermark, A., Blomqvist, P., and Zimmermann, F., "SafePellets Delivery report D4:4: Report on medium-scale self-heating experiments", 2013.

Blomqvist, P., Larsson, I., Lönnermark, A., Persson, H., Sjöström, J., and Lorentsson, H., "Karaktärisering av självuppvärmning i löslagrat avfall", Waste Refinery, Projektnummer WR-60, 2013.

2012

Lönnermark, A., Persson, H., Blomqvist, P., Larsson, I., Rahm, M., Dahl, J., Lindholst, S., and Hansen, P. L., "Self-heating and Off-gassing from Biomass Pellets during Storage", World Bioenergy 2012, Jönköping, Sweden, 29-31 May, 2012.

Lönnermark, A., Blomqvist, P., Persson, H., Rahm, M., and Larsson, I., "Use of small-scale methods for assessment of risk for self-heating of biomass pellets", SP Technical Research Institute of Sweden, SP Report 2012:49, Borås, Sweden, 2012.

Larsson, I., Blomqvist, P., Lönnermark, A., and Persson, H., "Medium-scale reference tests and calculations of spontaneous ignition in wood pellets – the LUBA project", SP Technical Research Institute of Sweden, SP Report 2012:50, Borås, Sweden, 2012.

Persson, H., "Brand i silo - Brandsläckning samt förebyggande och förberedande åtgärder", Myndigheten för samhällsskydd och beredskap (MSB), ISBN 978-91-7383-220-5, 2012.

2011

Dahl, J., Lindholst, S., Hansen, P. L., Lönnermark, A., Persson, H., and Blomqvist, P., "Large scale Utilization of Biopellets for energy Applications", 19th European Biomass Conference and Exhibition, Berlin, Germany, 6-10 June, 2011.

2010

Arshadi M., Blomqvist P., Melin S., Persson H. et al. "Safety Considerations and Health Concerns Regarding to Pellets During Storage, Handling and Transportation", chapter 5 in The Pellet Handbook edited by Ingwald Obernberger and Gerold Thek, Earthscan Limited, ISBN 978-1-844407-631-4, 2010.

Ibrahim, M. A., Hogland, W., Elmberg, E., Lönnermark, A., Persson, H., and Nammari, D. R., "Storage Techniques for Municipal Solid Waste, Frequency of Fires, and Their Related Emissions", Proceedings of Venice 2010 - The Third International Symposium on Energy from Biomass and Waste, Venice, Italy, 8-11 November, 2010.

Persson, H., "Silo fires require special tactics and equipment", In Industrial Fire Journal, 2010.
Lönnermark, A., Persson, H., Blomqvist, P., Hogland, W., "Fire Safety of Waste Storage", Linnaeus ECO-TECH '10, Kalmar, Sweden, November 22-24, (2010).

2009

Hogland, W., Lönnermark, A., Marques, M., and Persson, H., "Storage of organic materials, solid waste and biofuels - Risks for fires and fire fighting", Proceedings of Sardinia 2009 - Twelfth International Waste Management and Landfill Symposium, S. Margherita di Pula, Cagliari, Italy, 5-9 October, 2009.

Persson, H., and Blomqvist, P., "Silo Fires and Silo Fire Fighting", Bioenergy 2009, 4th International Bioenergy Conference, Jyväskylä, Finland, 2009. Persson, H., Blomqvist, P., and Tuovinen, H., "Inertering av siloanläggningar med kvävgasGasfyllnadsförsök och simuleringar", SP Technical Research Institute of Sweden, SP Rapport 2009:10, Borås, 2009.

2008

Lönnermark, A., Blomqvist, P., and Marklund, S., "Emissions from Simulated Deep-Seated Fires in Domestic Waste", Chemosphere, 70, 626-639, 2008.

Lönnermark, A., and Persson, H., "New guidelines needed for safety of storage of new fuels", *BrandPosten*, 38, 16-17, 2008.

Lönnermark, A., and Persson, H., "Nya bränslen kräver nya riktlinjer för säkerhet vid lagring", *BrandPosten*, 38, pp 16-17, 2008.

Lönnermark, A., Persson, H., Blomqvist, P., and Hogland, W., "Biobränslen och avfall - Brandsäkerhet i samband med lagring", SP Sveriges Tekniska Forskningsinstitut, SP Rapport 2008:51, Borås, Sweden (in Swedish), 2008.

Persson, H., "Fuel vapour composition and flammability properties of E85", *World Bioenergy 2008*, 164-168, Jönköping, Sweden, 27-29 May, 2008.

Persson, H., and Blom, J., "Research helps the fighting of a silo fire again", *BrandPosten*, 38, 30- 31, 2008.

Persson, H., Blom, J., and Modin, P., "Research experience decisive in extinguishing silo fires", *BrandPosten*, 37, 28-30, 2008.

Persson, H., Bremer, P., Rosell, L., Arrhenius, K., and Lindström, K., "Fuel vapour composition and flammability properties of E85", SP Technical Research Institute of Sweden, SP Report 2008:15, Borås, Sweden, 2008.

Blomqvist, P., and Persson, H., "Self-heating in storages of wood pellets", *World Bioenergy 2008*, 172-176, Jönköping, 2008.

Persson H. and Blomqvist P., "Fire and fire extinguishment in silos", Poster abstract in the *Proceedings of World Bioenergy 2008*, Jönköping, Sweden, (2008).

2007

Lönnermark, A., "Emission from Landfill Fires and Fires in Storage of Waste", *ECO-TECH 2007*, 353-362, Kalmar, Sweden, 26-28 November, 2007.

Lönnermark, A., Andersson-Sköld, Y., Axelsson, J., Haeger-Eugensson, M., Palm Cousins, A., Rosén, B., and Stripple, H., "Emissioner från bränder - Metoder, modeller och mätningar", Räddningsverket, P20-470/07, Karlstad, 2007.

Persson, H., Blom, J., and Modin, P., "Forskningserfarenheter avgörande vid släckning av silobrand", In *BrandPosten*, 2007.

Persson, H., and Blomqvist, P., "Fire and fire extinguishment in silos", *Interflam '07*, 365-376, London, England, 2007.

Persson, H., and Blomqvist, P., "Analys av gasinnehåll i topputrymmet av siloceller med träpellets", SP Sveriges Tekniska Forskningsinstitut, P702634 (not public), 2007.

Persson, H., Bremer, P., Rosell, L., Arrhenius, K., and Lindström, K., "Sammansättning och antändningsegenskaper hos bränsleångor i tankar innehållande E85", SP Sveriges Tekniska Forskningsinstitut, SP Rapport 2007:39, Borås, 2007.

Blomqvist, P., Persson, H., Hees, P. V., Holmstedt, G., Göransson, U., Wadsö, L., Sanati, M., and Rupar-Gadd, K., "An Experimental Study of Spontaneous Ignition in Storages of Wood Pellets", *Fire and Materials Conference*, San Francisco, USA, 2007.

2006

Persson, H., and Blomqvist, P., "Correct tactics required for extinguishing silo fires", BrandPosten, No 34, p. 18, 2006.

Persson, H., Blomqvist, P., and Yan, Z., "Brand och brandsläckning i siloanläggningar - en experimentell studie", SP Sveriges Provnings- och Forskningsinstitut, SP Rapport 2006:47, Borås, 2006.

Blomqvist, P., and Hees, P. V., "Spontaneous Ignition of Biofuels - An Experimental Investigation through Small- and Large-Scale Tests", SP Swedish National Testing and Research Institute, 2006:41, Borås, 2006.

2005

Lönnermark, A., "Analyses of Fire Debris after Tyre Fires and Fires in Electrical and Electronics Waste", SP Swedish National Testing and Research Institute, SP REPORT 2005:44, Borås, Sweden, 2005.

Lönnermark, A., "Analyser av brandgaser och släckvatten i samband med brandförsök med hushållsavfall", SP Sveriges Provnings- och Forskningsinstitut, P402284, Borås, 2005.

Lönnermark, A., and Blomqvist, P., "Emissions from Fires in Electrical and Electronics Waste", SP Swedish National Testing and Research Institute, SP Report 2005:42, Borås, Sweden, 2005.

Lönnermark, A., and Blomqvist, P., "Emissions from Tyre Fires", SP Swedish National Testing and Research Institute, SP Report 2005:43, Borås, Sweden, 2005.

Blomqvist, P., "Spontaneous ignition in wood pellets", BrandPosten, No 32, p. 7, 2005.

Zenghua Y., Blomqvist P., Göransson U., Holmstedt G., Wadsö L. and Van Hees P., "Validation of CFD Model for Simulation of Spontaneous Ignition in Bio-mass Fuel Storage", proceedings of the 8th International Symposium on Fire Safety Science (IAFSS), Beijing, China (2005).

2004

Blomqvist, P., Lönnermark, A., and Simonson, M., "Miljöbelastning vid bränder och andra olyckor - Utvärdering av provtagning och analyser", Räddningsverket, P21-452/04, Karlstad, Sweden, 2004.

Persson, H., and Lönnermark, A., "Tank Fires - Review of fire incidents 1951-2003", SP Swedish National Testing and Research Institutes, SP REPORT 2004:14, Borås, Sweden, 2004.

Persson, H., and Blomqvist, P., "Släckning av silobränder", SP Swedish National Testing and Research Institute, SP-Arbetsrapport 2004:16, Borås, 2004.

2003

Persson, B., Lönnermark, A., and Persson, H., "FOAMSPEX: Large Scale Foam Application - Modelling of Foam Spread and Extinguishment", Fire Technology, 39, 4, 347-362, 2003.

Persson, H., "Skumsläckning av bensin med etanolinblandning", Räddningsverket, P21-417/03, Karlstad, 2003.

Blomqvist, P., and Persson, B., "Spontaneous Ignition of Biofuels-A Literature Survey of Theoretical and Experimental Methods", SP Swedish National Testing and Research Institute, SP AR 2003:18, Borås, 2003.

2002

Persson, B., Lönnermark, A., and Persson, H., "Modelling of Foam Spread on a Burning Liquid Fuel Surface", Fire Safety Science - Proceedings of the Seventh International Symposium, 667- 678, Worcester, USA, 16-21 June, 2002.

Persson, H., Lönnermark, A., and Persson, B., "FOAMSPEX, Large Scale Foam Application - Modelling of Foam Spread and Extinguishment", NFPRF Fire Suppression and Detection Research Application Symposium, Tampa, Florida, USA, 23-25 January, 2002.

2001

Lönnermark, A., "Hur stora cisternbränder går det att släcka?", BrandPosten, 24, p 18, 2001.

Lönnermark, A., Persson, B., and Persson, H., "Modelling of Foam Spread on a Burning Liquid", 9th International Fire Science & Engineering Conference (Interflam 2001), 291-302, Edinburgh, Scotland, 17-19 September, 2001.

Lönnermark, A., Persson, B., and Persson, H., "Brand i stora cisterner kräver högre påföringshastighet", BrandPosten, 25, p 20-21, 2001.

Persson, B., Lönnermark, A., Persson, H., Mulligan, D., Lancia, A., and Demichela, M., "FOAMSPEX - Large Scale Foam Application - Modelling of Foam Spread and Extinguishment", SP Swedish National Testing and Research Institute, SP Report 2001:13, Borås, Sweden, 2001.

1996

Persson, H., and Bobert, M., "FAIRFIRE - Fire Fighting Foams: Small Scale Fire Test Procedure - Small Scale Fire Tests", SP Swedish National Testing and Research Institute, SP REPORT 1996:27, Borås, Sweden, 1996.

Persson, H., and Milovancevic, M., "FAIRFIRE - Fire Fighting Foams: Small Scale Fire Test Procedure - Improvement of Drainage and Expansion Methodology", SP Swedish National Testing and Research Institute, SP REPORT 1996:28, Borås, Sweden, 1996.

Persson, H., Wetterlund, H., and Bobert, M., "FAIRFIRE - Fire Fighting Foams: Small Scale Fire Test Procedure - Standard Scale Fire Tests", SP Swedish National Testing and Research Institute, SP REPORT 1996:26, Borås, Sweden, 1996.

1994

Persson, B., and Dahlberg, M., "A Simple Model of Foam Spreading on Liquid Surfaces", SP Swedish National Testing and Research Institute, SP Report 1994:27, Borås, Sweden, 1994.

1992

Persson, H., "Fire Extinguishing Foams - Resistance Against Heat Radiation", SP Swedish National Testing and Research Institute, SP REPORT 1992:54, Borås, Sweden, 1992.

1990



Persson, H., "Basutrustning för skumsläckning - Försöksresultat och rekommendationer som underlag för dimensionering och utförande", SP Swedish National Testing and Research Institute, SP RAPPORT 1990:36, Borås, Sweden (in Swedish), 1990.

Persson, H., Nählinder, J., and Tuovinen, H., "Brandrisker vid lagring och hantering av brandfarlig vara", SP Swedish National Testing and Research Institute, SP RAPOPPORT 1990:18, Borås, Sweden, 1990.

1987

Persson, H., "Hur släcker man stora vätskebränder med skum", SP Swedish National Testing and Research Institute, SP Rapport 1987:13, Borås, 1987.