Theses supervised by Riikka Puurunen

Doctoral theses

Supervising professor of doctoral theses:

1. Heikki Harju: On-going work. Doctoral thesis, Aalto University School of Chemical Engineering, Finland.
2. Sara Kärki: On-going work. Doctoral thesis, Aalto University School of Chemical Engineering, Finland.
3. Johanna Kihlman: On-going work (VTT). Doctoral thesis, Aalto University School of Chemical Engineering, Finland.
4. Ellen Järvinen: On-going work. Doctoral thesis, Aalto University School of Chemical Engineering, Finland, estimated: 2027.
5. Joakim Kattelus: On-going work. Doctoral thesis, Aalto University School of Chemical Engineering, Finland, estimated: 2026.
6. Christine Gonsalves: On-going work. Doctoral thesis, Aalto University School of Chemical Engineering, Finland, estimated: 2026.
7. Niko Heikkinen: Porous media modification with atomic layer deposition: Catalyst performance protection with an inert coating on a Cobalt-based Fischer-Tropsch catalyst. Doctoral thesis, Aalto University School of Chemical Engineering, Finland, 2025.
8. Jose Luis Gonzalez Escobedo: Hydrodeoxygenation of lignocellulose-related compounds with supported noble-metal catalysts. Doctoral thesis, Aalto University School of Chemical Engineering, Finland, 2024.
9. Jihong Yim: Conformality of atomic layer deposition analysed via experiments and modelling: case study of zinc oxide for catalytic applications. Doctoral thesis, Aalto University School of Chemical Engineering, Finland, 2024.
10. Emma Verkama: Noble metal catalysts for the hydrodeoxygenation and hydrodenitrogenation of fatty amides. Doctoral thesis, Aalto University School of Chemical Engineering, Finland, 2024.
11. Eveliina Mäkelä: Hydrotreatment of lignocellulose-derived molecules to renewable fuels and chemicals. Doctoral thesis, Aalto University School of Chemical Engineering, Finland, 2021.
12. Irene Coronado: Catalytic Aqueous-Phase Reforming of Biorefinery Water Fractions. Doctoral thesis, Aalto University School of Chemical Engineering, Finland, 2021.
13. Yaseen Khan: Structured Microreactors for the Heterogeneously Catalyzed Gas-phase Dehydration and Partial Oxidation of 1-Butanol. Doctoral thesis, Aalto University School of Chemical Engineering, Finland, 2020.
14. Salla Jaatinen: Carbon Catalysts in Biofuel Production: from Furfural to 2-Methylfuran. Doctoral thesis, Aalto University School of Chemical Engineering, Finland, 2019.

15. Noora Kaisalo: Tar reforming in biomass gasification gas cleaning. Doctoral thesis, Aalto University School of Chemical Engineering, Finland, 2017.

Advisor of doctoral thesis:

1. Oili Ylivaara: On-going work. Doctoral thesis, Aalto University School of Electrical Engineering, Finland.

M. Sc. theses

Supervising professor of M. Sc. theses (Aalto University School of Chemical Engineering):

1. Julia Jänkävaara, 2025
2. Eetu Varttila, Catalytic hydrocracking of polyolefin model compounds and simultaneous hydrotreating of nitrogen impurities, 2025
3. Sanni Ilmaranta, Effect of process parameters on glycerol aromatization over Zn-modified H-ZSM-5 catalyst, 2025
4. Muhammad Wasayh, Modification of alumina spheres with zinc in a fixed-bed atomic layer deposition reactor for particulate materials, 2025
5. Sami Yli-Seppänen, Development of Ru and Pt atomic layer deposition processes and their recyclability, 2025
6. Veikka Lehtinen, Green aromatics from biomass pyrolysis oils, 2025
7. Mikael Nortes, Borate fusion sample preparation for the x-ray fluorescence spectroscopy analysis of solid heterogeneous catalysts, 2024
8. Muhammad Ossama, On reactant delivery into a new fixed-bed atomic layer deposition reactor for particulate matter, 2024
9. Valpuri Happo, Synthesis and characterization of supported transition metal sulfide catalysts, 2023
10. Henri Hopeasaari, Structured catalysts for carbon dioxide hydrogenation to methanol, 2023
11. Ellen Järvinen, Acidity characterisation of zeolites for glycerol aromatisation with temperature programmed desorption, 2023
12. Hammad Shamshad, Nitrous oxide dissociative pulse titration analysis of copper and atomic layer deposited zinc on copper catalysts, 2023
13. Aleksi Vartiainen, Catalytic systems in the purification of carbon monoxide from hydrogen and ethylene-rich gasses, 2023
14. Jänis Järvilehto, Atomic layer deposited platinum in porous spheres and on well-defined high-aspect-ratio structures: Experiments and modelling, 2022
15. Ida Uotila, Supported Fischer-Tropsch catalysts for carbon dioxide based light olefin production, 2022
16. Abhinash Singh, Ruthenium-based catalyst development for Fischer-Tropsch synthesis, 2022
17. Krista Kuutti, Heterogeneously catalysed light olefin epoxidation with hydrogen peroxide, 2022

18. Ahmed Sajid, Characterization and testing of zinc copper-based catalysts supported on different metal oxides for carbon dioxide hydrogenation to methanol, 2022
19. Joakim Kattelus, Preparation and characterization of promoted alumina-supported MoS_2 catalysts for hydrodenitrogenation, 2022
20. Niko Virkki, Reverse water-gas shift reaction in dielectric barrier discharge reactor, 2021
21. Ella Rimpilä, Upscaling of a ruthenium atomic layer deposition process using a zero-valent precursor, 2021
22. Hassaan Warraich, Cyclic adsorption studies on carbon dioxide hydrogenation to methanol using diffuse reflectance infrared Fourier transform spectroscopy and mass spectrometry, 2021
23. Mikko Näsi, Development of hafnium and aluminum oxide processes in a new laminar flow atomic layer deposition reactor, 2021
24. Jasmiina Palo, Effect of water and atomic layer deposited overcoating on cobalt-based Fischer-Tropsch catalyst, 2020
25. Emma Verkama, Towards catalytic hydrodenitrogenation: preparation of supported platinum catalysts and phase equilibria calculations, 2020
26. Tyko Viertiö, Atomic layer deposition coatings for catalytic high-temperature filtration of gasification gas, 2019
27. Jama Ali, Catalytic aqueous phase reforming of the Fischer-Tropsch derived water fraction: Kinetics and reactor modeling, 2019
28. Janne-Joonas Tiitinen, Gold catalyst supported on titania for 1-butanol partial oxidation in a microreactor, 2019
29. Aki Braunschweiler, Catalytic dehydrogenation of liquid organic hydrogen carriers , 2018
30. Jihong Yim, Preparation of oxygen permeable gastight disk-type perovskite membranes by dry pressing, 2018

Advisor of M.Sc. theses:

1. Leoni Klingelhöfer, Hydrodenitrogenation of primary, secondary, and tertiary alkyl amines over supported noble metal catalysts, Technische Universität Darmstadt, 2023 (my role: 2nd supervisor; 1st supervisor Prof. Marcus Rose)
2. Simon Andsten, Development of a powder atomic layer deposition reactor for research purposes, Aalto University, Master's Programme in Mechanical Engineering, 2022
3. Pauline Voigt, Preparation and Characterization of Catalysts Made by Atomic Layer Deposition in a Fixed-bed Reactor. M. Sc. thesis, Technische Universität Dresden, Germany, 2018
4. Ville Rontu, Atomic layer deposition of niobium nitride thin films. M. Sc. thesis, Aalto University School of Chemical Engineering, 2014
5. Bram Beheydt, In situ spectroscopische studie van chroomhoudende dehydrogenatiekatalysatoren. M.Sc. thesis, Katholieke Universiteit Leuven, Belgium, 2001

B. Sc. theses

Supervisor of B.Sc. theses:

1. Taru Tuomi, Lähtöaineet nikkelimateriaalien atomikerroskasvatusprosesseissa, B. Sc. thesis, Aalto University School of Chemical Engineering, 2022
2. Rasmus Rönkä, Atomikerroskasvatus katalyyttien valmistustekniikkana. B. Sc. thesis, Aalto University School of Chemical Engineering, 2017
3. Kathleen Vanrusselt, Katalytische dehydrogenatie van alkanen met chroom-beladen aluminakatalysatoren: een in situ UV–VIS spectroscopische studie. B. Sc. thesis, Katholieke Hogeschool Limburg, Departement Industriële Wetenschappen en Technologie, 2001