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Brief Biography:

1964 born in Maaria (Turku), Finland

1989 Master's degree (Dipl.-Ing.), Department of Chemical Engineering, Helsinki University of Technology (today Aalto University), Finland

1997 Doctor of Science (Technology), Department of Chemical Engineering Helsinki University of Technology (today Aalto University), Finland

Professional Career:

1989–2000 Industrial Catalysis Research, Neste Oil Refining (prof. leave 1999-2000), Finland

1999–2000 Post Doc, Helsinki University of Technology, Laboratory of Chemical Engineering and Plant Design, Finland

2001 → Post doc, since 2003 permanent position as head of sustainable production systems team and laboratory manager, Process Systems Engineering, Max Planck Institute of Dynamics for Complex Technical Systems, Germany

2009 → Adjunct lecturer in Otto-von-Guericke University Magdeburg, Faculty of Process and Systems Engineering, Germany

Research Interest: Catalysis, Reaction Engineering and Modelling of Chemical and Energy Conversion Systems, CO₂ Utilisation and Recycle, Chemical Storage of Renewable Energy, Biomass Conversion to Fuels and Electricity, Chemical and Fuel Production with Photosynthetic Organisms (algal biomass), Sustainability Assessment (LCA), Chemical Recycle of Polymers, Process Systems Engineering

Teaching: M.Sc. Courses in Otto-von-Guericke University Magdeburg: Biofuels: Sustainable Production and Utilization (2009-2017), since 2018 Sustainability Assessment (LCA) for Biofuels.

Evaluator activities: for European Commission and national organisations since 2003.

Publications:

Book contributions (selection)

- Rihko-Struckmann, L., Karinen, R., Catalysis in Etherification Processes, in *Catalysis in Finland – An exciting Pathway*, Salmi, T., Mäki-Arvela, P. (Ed.), pp. 320-326, Suomen Katalysiseura, ISBN:978-952-93-3085-0, Helsinki, 2013.
- Rihko-Struckmann, L. K., Munder, B. Chalakov, L. and Sundmacher, K., Solid Electrolyte Membrane Reactors, Chapter 7: Solid Electrolyte Membrane Reactors, in *Membrane Reactors*, Seidel-Morgenstern (Ed.), pp. 193-233, Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim, 2010.
- Hertel, C., Heidebrecht, P., Rihko-Struckmann, L. and Sundmacher K. "Hydrogen Production from Reformate Gas by a Cyclic Water Gas Shift Reactor" in 18th World Hydrogen Energy Conference 2010 - *WHEC 2010: May 16.-21. 2010 Book 3: Hydrogen Production Technologies - Part 2 / D. Stolten, T. Grube (Ed.)*, Essen, 2010.
- Kolah, A., Rihko-Struckmann, L., and Sundmacher, K., Catalytic Distillation Technology Applied to Ether Production, in *Handbook of Methyl Tertiary Butyl Ether*, Hamid, A. (Ed.), Marcel-Dekker, 2004.
- Lappi, M. and Rihko, L., Unregulated Exhaust Emissions from Engine Vehicles, VTT Research Notes 1748, VTT, Espoo, 1996.

Publications in journals (with peer-review)

1. Koenig-Mattern, L., Linke, S., Rihko-Struckmann, L., Sundmacher, K., Computer-aided solvent screening for the fractionation of wet microalgae biomass, *Green Chem.* 23 (2021) 10014 -10029.
2. Uebbing, J., Biegler, L.T., Rihko-Struckmann, L., Sager, S., Sundmacher, K., Optimisation of Pressure Swing Adsorption via Trust-Region Filter Algorithm and Equilibrium Theory, *Comput. Chem. Eng.* (2021), 107340.
3. Ludwig, K., Rihko-Struckmann, L., Brinitzer, G., Unkelbach, G., Sundmacher, K., beta-Carotene extraction from *Dunaliella salina* by supercritical CO₂, *J. Appl. Phycol.* 33 (2021) 1435 – 1445.
4. Weber, S., Abel, K.L., Zimmermann, R.T., Huang, X. H., Bremer, J., Rihko-Struckmann, L.K., Batey, D., Cipiccia, S., Titus, J., Poppitz, D., Kubel, C., Sundmacher, K., Glaser, R., Sheppard, T.L., Porosity and Structure of Hierarchically Porous Ni/Al₂O₃ Catalysts for CO₂ Methanation, *Catalysts* 10 (2020) 1471.
5. Uebbing, J., Rihko-Struckmann, L., Sager, S., Sundmacher, K., CO₂ methanation process synthesis by superstructure optimization, *J. CO₂ Util.*, Volume: 40 (2020) 101228.
6. Rihko-Struckmann, L. K., Oluyinka, O., Sahni, A., McBride, K., Fachet, M., Ludwig, K., Sundmacher, K., Transformation of remnant algal biomass to 5-HMF and levulinic acid: Influence of biphasic solvent system, *RSC Adv.* 10 (2020) 24753-24763.
7. Fachet, M., Witte, C., Flassig, R.J., Rihko-Struckmann, L. K., McKie-Krisberg, Z., Polle, J.E.W., Sundmacher, K., Reconstruction and analysis of a carbon-core metabolic network for *Dunaliella salina* *BMC Bioinf.* 21(2020)1,1.
8. Uebbing, J., Rihko-Struckmann, L., and Sundmacher K. Exergetic assessment of CO₂ methanation processes for the chemical storage of renewable energies, *Appl. Energy* 233-234 (2019) 271-282.
9. Schack, D., Rihko-Struckmann, L., Sundmacher, K., A linear programming approach for structure optimization of Renewable-to-Chemicals (R2Chem) production networks, *Ind. Eng. Chem. Res.* SI 57 (2018) 9889-9902.
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11. Fachet, M., Flassig, R. J., Rihko-Struckmann, L. K.; Sundmacher K., Carotenoid Production Process Using Green Microalgae of the *Dunaliella* Genus: Model-Based Analysis of Interspecies Variability, *Ind. Eng. Chem. Res. SI* 56 (2017) 12889-12899.

12. Zinser, A., Rihko-Struckmann, L. K., Sundmacher, K. (2017) Process Optimization by Applying a Simultaneous Dynamic Method, *Comput. Aided Chem. Eng.*, 40C (2017) 2047–52.
13. Schack, D., Rihko-Struckmann, L. and Sundmacher, K., Economic linear objective function approach for structure optimization of renewables-to-chemicals (R2Chem) networks, *Comput. Aided Chem. Eng.* 40B (2017) 1975-1980.
14. El-Sibai, A., Rihko Struckmann, L. K., Sundmacher, K., Model-based Optimal Sabatier Reactor Design for Power-to-Gas Applications, *Energy Technol. (Weinheim, Ger.)* SI 5 (2017) 911-921.
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