

**Dr Raitis Kalnins PhD MEng**  
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## EDUCATION

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**PhD in Chemical Engineering** 09/2012 - 07/2017  
*University of Birmingham, UK*

- Valorisation of lignocellulosic biomass with focus on the production of prebiotic and antioxidant rich high value stream from energy crops and agricultural waste
- Thesis title: "Production of Prebiotic Rich Extracts from Lignocellulosic Biomass Using Subcritical Water within the Context of Biorefining"
- Supervised three MEng research projects

**MEng in Chemical Engineering with Business Management** 09/2008 - 07/2012  
*University of Birmingham, UK*

## EMPLOYMENT

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**Co-Founder & CEO** since 08/2020  
*Biorefic, SIA, LV*

- Biorefining and biotech start-up focusing on soluble fibre (prebiotics) and algae-based omega-3 oil production
- Strategic positioning, front end engineering design (FEED), product development, branding, value chain building, fundraising

**Project Manager** since 07/2022  
*Eco Baltia Vide, SIA, Part-time, LV*

- Project owner – waste gasification and pyrolysis
- Supply and offtake channel building, technology due diligence, financial modelling, strategic positioning, regulatory compliance

**Management Consultant** since 06/2019  
*Self-Employed, EU*

- Engineering due diligence, economic feasibility, strategic positioning, R&D
- Clients: European Investment Bank, A/S Eco Baltia Group, SIA Polylabs, Renteh BV, SIA Hyrogas, Central Finance & Contracting Agency of Latvia, Ministry of Environmental Protection and Regional Development of Latvia

**Senior Expert in Carbon Capture and Utilisation from Waste Gasification** 10/2021-02/2021  
*University of Latvia, LV*

- Engineering and Development of Carbon Capture and Utilisation Pilot technology in the fields of Buffered Accelerated Weathering of Limestone (BAWL), Direct Ocean Capture (DOC), and Ocean Alkalinity Enhancement
- Economic feasibility, integration with gasification systems, design of experiments (DoE)

**Researcher in Waste Gasification and Carbon Capture** 09/2020-08/2021  
*VAAO, SIA; University of Latvia, LV*

- Innovation of the waste-to-energy concept for the low-carbon economy: development of novel carbon capture technology for gasification and pyrolysis of municipal solid waste
- Conceptual design of sorption column for carbon capture, DoE, industrial testing, integration with gasification and pyrolysis systems

**Process and Innovations Engineer** 07/2017 - 05/2019  
*Eco Baltia Group, A/S (incl. PET Baltia, Nordic Plast), LV*

- Corporate strategy and due diligence on emerging and commercial scale technologies (gasification, pyrolysis, biochar, and chemical recycling)
- Process optimisation projects leading to increased throughput, energy savings
- LEAN manufacturing project implementation across six subsidiary companies
- Process Control and Business Intelligence project initiation and oversight
- Front End Engineering Design (FEED) of new recycling lines

**Chemical/Process Engineering Consultant**

07/2014 - 09/2016

*Process Plant Computing Ltd. (PPCL), UK*

- Consulting projects within oil and gas, pharmaceutical, and paper industries
- Clients: BP (UK), GASCO (UAE), Atlantic LNG (TT), National Grid (UK), Smurfit Kappa (UK), Nova Chemicals (CAD), Chevron (USA)
- Main project areas: alarm rationalisation, process troubleshooting, process optimisation
- GPC (geometric process control) and Big Data modelling for event prediction
- Staff Training
- UI design

**Post-Graduate Demonstrator/Teaching Assistant**

10/2012 - 06/2014

*University of Birmingham, UK***Research Project in Carbon Dioxide Capture and Utilisation**

07/2012 - 09/2012

*University of Birmingham, UK***Chemical Engineering Internship**

07/2011 - 10/2011

*Recycled Paper Mill, Smurfit Kappa SSK Ltd., UK***Chemical Engineering Internship**

07/2009 - 08/2009

*Biodiesel Production Plant, A/S 'Bio-Venta', LV*