



Matilda Watz

Office: +46455385568; mobile: +46766073924
E-Mail: matilda.watz@bth.se



SUMMARY

Matilda is PhD student in the Sustainable Product Development research lab at the Department of Strategic Sustainable Development at Blekinge Institute of Technology (BTH) in Karlskrona, Sweden, from which she since 2019 also holds a Licentiate of Engineering. Since June 2017, she has been researching practices of sustainability integration in requirements within product developing companies. Currently, she is working with group model building applications using qualitative and quantitative system analysis tools to support a strategic sustainability perspective in the early phases of design projects, which lay ground for the initial requirement specifications. She is also a teacher in methods and tools for sustainable product design for engineering students at BTH.

Work Experience

2017 – PhD student, Sustainable Product Development, Blekinge Institute of Technology, Department of Strategic Sustainable Development

2011 – 16 Production process Engineering, Summer internships and assembly at Scania CV AB, Scania Chassis Assembly, Södertälje, Sweden

Education

2019 - Third-Cycle Studies, later part, Blekinge Institute of Technology, Karlskrona, Sweden

2017 – 19 Lic. Eng. in Strategic Sustainable Development, Blekinge Institute of Technology, Karlskrona, Sweden

2015 – 2017 M.Sc. in Industrial Ecology and Environmental Engineering, The Royal Institute of Technology, Stockholm, Sweden

2012 – 2015 B.Eng. in Mechanical Engineering, The Royal Institute of Technology, Stockholm, Sweden

PROJECTS

2019 – Sustainable Product Development within Model-driven development and decision support

(<https://www.bth.se/eng/research/research-fields/strategic-sustainable-development/sustainable-product-development/>)

Through business-collaboration, we aim to develop, disseminate, and integrate relevant, user-friendly and efficient support methods and tools for sustainable product-service system innovation into business leaders', business developers'

EXPERTISE

Sustainable Product Development;
Requirements Management;
Systems Analysis

LANGUAGES

Swedish
English

AWARDS

2020:

Sustainable Product Development research on the IVA (Swedish Royal Engineering science Academy) top 100 list.

2018 & 2020:

Outstanding contribution paper awards at the International Design Conference

ADDITIONAL EDUCATION

3rd cycle

Strategic Sustainable Development;
Sustainability transitions;
System Dynamics;
Higher Education Pedagogy;
Modelling, Simulation and Optimization in

2nd cycle

Industrial Ecology;
Waste Management;
Material- and Energy Flow Accounting;
Cleaner Production;
Ecological Economics;
CAD

and product developers' working environments that enable and inspire industry to thrive in the changing global context.

2018 – 19 Sustainability implementation in the product innovation process: SIP – a toolkit and methodology (<https://bth.se/sip>)

For companies to support and accelerate a transition towards more climate and resource-efficient materials and products, novel approaches and methods are needed in the product innovation process. This project has the aim to create an implementation package with methodology and interconnected methods and tools to systematically integrate and implement sustainability in product development companies. Matilda is responsible for the exploration of current practices of sustainability requirements management within the industry, and the development of a methodology for early phase modelling of relationships between key sustainability criteria and target requirements. She also takes part in planning, preparation and facilitation of workshops where state of the art research is presented for, and tested by, academic and industrial research partners and external industrial participants. The research project is thus conducted in collaboration with industrial partners, and Matilda's research study is based on a qualitative research design.

2017 – 18 Strategic, Tactical, and Operational Implementation of Sustainability into the Innovation Process (STOSIP) (<https://www.bth.se/eng/stosip/>)

The project's main purpose is to support product development and manufacturing companies in integrating and implementing a strategic sustainability perspective in the product innovation process. Matilda was responsible for the research track of sustainability integration into product requirements and guidance for down-selection of emerging technologies. She is applying a research design composed of both qualitative and quantitative methods, including literature reviews, interviews, questionnaires, case studies, workshops etc. This work builds on close relationships with industrial partners to maximize the benefit for companies and society.

PUBLICATIONS

Watz M. (2020) Using Group Model Building to Foster Learning for Strategic Sustainable Development. *Sustainability*. 12(20), 8350. <https://doi.org/10.3390/su12208350>

Watz, M., & Hallstedt, S. (2020). Group model building with causal loop diagrams to foster capabilities for sustainable design and product development. *Proceedings of the Design Society: DESIGN Conference*, 1, 2207-2216. <https://doi.org/10.1017/dsd.2020.53>

Watz, M., & Hallstedt, S. I. (2020). Profile model for management of sustainability integration in engineering design requirements. *Journal of Cleaner Production*, 247, 119155. <https://doi.org/10.1016/j.jclepro.2019.119155>

Watz, M. (2019). *Utilizing requirements to support sustainable product development: Introductory approaches for strategic sustainability integration* (Doctoral dissertation, Blekinge Tekniska Högskola).

Siiskonen, M., Watz, M., Malmqvist, J., & Folestad, S. (2019, July). Decision Support for Re-designed Medicinal Products-Assessing consequences of a customizable product design on the value chain from a sustainability perspective. *Proceedings of the Design Society: International Conference on Engineering Design* (Vol. 1, No. 1, pp. 867-876). Cambridge University Press. <https://doi.org/10.1017/dsi.2019.91>

Watz, M. and Hallstedt, S.I. 2018. Integrating Sustainability in Product Requirements. *Proceedings of the DESIGN 2018 15th International Design Conference*, May 21-24 2018, Dubrovnik, Croatia <https://doi.org/10.21278/idc.2018.0377>