



# Sophie I. Hallstedt



Telephone: +46 455 385511

Mobile: +46 708 192265

E-Mail: [sophie.hallstedt@bth.se](mailto:sophie.hallstedt@bth.se)

## SUMMARY

Sophie I. Hallstedt is an associate professor at BTH. In her research from 2008 a foundation for Sustainable Product Development (SPD) was initiated. Since then she has developed the research area together with her colleagues and is now supervising several PhD students. Sophie is leading the research area SPD as one of the prioritized and selected research tracks at BTH. Her research is about how a strategic socio-ecological sustainability perspective can be integrated and implemented on strategic, tactical and operational levels in companies in order to be able to bring forward sustainable solutions. Several methods and approaches has come out from her research which for example, enhance the ability to measure: i) maturity level of sustainability implementation; ii) sustainability consequences of different solutions, and then; iii) quantify and visualize the progress of sustainability implementation. The purpose of her research is to increase the product design teams' ability to make strategic choices and contribute to a more proactive company regarding sustainability issues and make business advantages out of that.

## WORK EXPERIENCE

- 2015 – present **Associate Professor and Research area leader** for Sustainable Product Development at Dept. of Strategic Sustainable Development, BTH. **Project leader** for “STOSIP” project and one subproject in the Profile project “MD3S”. **Main supervisor** for three PhD-students (Jesko Schulte, Matilda Watz, Carolina Villamil) and **supervisor** for one PhD-student (Patricia Lagun Mesquita). **Examiner and senior lecturer** in Master courses and PhD courses.
- 2013 - 2015 **Senior Lecturer** and **supervisor** for two PhD-students (Patricia Lagun Mesquita and Rachael Gould) in Sustainable Product Development at Dept. of Strategic Sustainable Development, BTH. **Research area leader** and **project leader** in the Profile project “MD3S”. **Project leader** in the “STOSIP” project. **Examiner and senior lecturer** in Master courses.
- 2011 – 2013 **Head of Department** and **senior lecturer. Supervisor** for two PhD-students (Cecilia Bratt and Rachael Gould) in Strategic Sustainable Development. **Project leader** for “Labelling and Procurement support for Sustainable Product Innovation”. **Post doc** in the Vinnmer project “Sustainability criteria in concept evaluation methodology”.
- 2008 – 2011 **Senior Lecturer** at the Dept. of Mechanical Engineering, BTH. **Project leader** for the research project “Labelling and Procurement support for Sustainable Product Innovation”. **Supervisor** for two PhD-students (Cecilia Bratt). **Programme Director** and **project leader** for the development project of the Master Programme in “Sustainable Product-Service System Innovation”.

## AREAS OF EXPERTISE

- Sustainable product development
- Sustainability assessments
- Sustainability integration in early product innovation phases
- Strategic Sustainable Development Planning

## LANGUAGES

- Swedish (mother tongue)
- English (fluent)
- German (beginner's level)

## ADDITIONAL EDUCATION

- Pedagogy courses for higher education, BTH, Sweden
- Ph.D. Supervision Course, Linné University, Växjö, Sweden.
- Managing Product Development for Executives, Chalmers Professional Education
- Development- Group-Leader- education, Försvarshögskolan

- 1997 – 2008 **PhD student and lecturer** at the Dept. of Mechanical Engineering Development, BTH. Formally registered at the Department of Physical Resource Theory at Chalmers University of Technology. Course development and teaching.
- 1995 – 1997 **Teacher** at the Dept. of Mechanical Engineering, **Högskolan Karlskrona/Ronneby**
- 1995 **Assisting traffic planner** at Boverket, Karlskrona
- 1992 **Environmental Engineer** at SSAB Tunnpå, Luleå

## EDUCATION/EXAMS

---

- **Associate Professor (Docent)** in Mechanical Engineering with emphasis on Sustainable Product Development, Blekinge Institute of Technology, Karlskrona, Sweden, 2015.
- **Ph.D.** in Mechanical Engineering with emphasis on Sustainable Product Innovation, Blekinge Institute of Technology, Karlskrona, Sweden, 2008.
- **Licentiate** in Engineering in Environmental Sciences, Chalmers University of Technology, Gothenburg, Sweden, 2001.
- **M.Sc.** in Environmental Planning and Design (Civilingenjör), Luleå University of Technology, Luleå, Sweden, 1994.

## OTHER ENGAGEMENTS AND MEMBERSHIPS

---

- Steering group member for Sustainable Design a Special Interest Group in the Design Society <https://www.designsociety.org>
- Run (together with 2 other researchers a national PhD course in Sustainability in Engineering Product Development as part of the course Engineering Product Development within the Product Development Academy. <http://www.productdevelopmentacademy.se/2017/09/10/pda-future-workshop-at-design-sciences-lund-university/>)

## RECENT PROJECTS

---

- 2015 – present **Strategic, Tactical and Operational implementation of Sustainability into the Innovation Process – STOSIP.**  
Sophie initiated, applied and leads the STOSIP project. The overall project objective is to support manufacturing companies to integrate and implement sustainability on strategic, tactical and operational levels in the company. Within the project, Sophie has investigated how to guide decisions for down-selection and exploration of emerging technologies and materials from a sustainability and value perspective. Sophie supervises several PhD-students and leads work packages in the project. The project is funded by Knowledge Foundation. <https://www.bth.se/eng/stosip/>
- 2013 – present **Model Driven Development and Decision Support – MD3S**  
This research profile aims, in co-production mode develop, disseminate, and integrate relevant, user-friendly and efficient support methods and tools for sustainable product-service system innovation. Within the project, Sophie supervises several PhD-students and leads a subproject that aims to integrate sustainability and value in the early innovation phases. The project is funded by Knowledge Foundation. <http://bth-collaboration.se/content/model-driven-development-and-decision-support-md3s>.
- 2010-2013 **Sustainability criteria in concept evaluation methodology**  
Sophie initiated and applied for a post-doc period of two years. The project objective was to promote the project leader's qualifications, and build up a long-term partnership between BTH and GKN. The research aim was to clarify how to define sustainability features in the early product

- innovation phases and suggest an improved concept design and evaluation methodology, including sustainability aspects during the product life cycle. The project was funded by Vinnova.
- 2009-2011 **Post-doc for Sustainable Product Innovation**  
Sophie initiated and applied for a post-doc period of two years. During this period, she spent some of her working time in industry and at the same time developed her research profile more towards early phases of the product innovation process with the manufacturing industry as target group. The main purpose for this project was also to further develop research in sustainable product development through application and implementation of support tools for Sustainable Product Development. The project was funded by Knowledge Foundation.
- 2009-2012 **Labelling and Procurement Support for Sustainable Product Innovation**  
The main question for this project was a framework for strategic sustainable development that could aid development of criteria and guidelines for sustainability based product labelling and sustainability-based procurement policies. Sophie was the initiator, project leader and supervisor for the PhD student Cecilia Bratt. The project was funded by Knowledge Foundation.
- 2006-2009 **Prioritisation Support for Sustainable Product Development**  
Sophie was one of the researchers initiating and leading the project. Within the project she worked with the main question - how organizational understanding and adoption of a strategic sustainability perspective at senior management level permeate product and process development. The project was funded by Knowledge Foundation.
- 2005-2008 **Effective and Sustainable Waterjet Cutting**  
This project took a multidisciplinary approach that involved fluid dynamics, machine dynamics/virtual prototyping and sustainability assessment as the main and interrelated areas. Within this project Sophie suggested an approach for sustainability-driven design optimization. The project was funded by the Knowledge Foundation.
- 1998-2000 **Tool for Sustainable Product Development and Investment Planning**  
The project which was carried out in collaboration between the Department of Mechanical Engineering, BTH, and the Department of Physical Resource Theory, Chalmers University of Technology and Göteborg University. Within the project Sophie developed a method for sustainable product development. The project was funded by the Swedish National Board for Industrial and Technical Development.

## SELECTED PUBLICATIONS

---

1. Broman G., Byggeth\* S. and Robèrt K.-H., 2002. Integrating Environmental Aspects in Engineering Education, *International Journal of Engineering Education*, ISSN 0949-149X, Vol. 18, No. 6.
2. Byggeth\* S. H. and Hochschorner E., 2006. Handling trade-offs in Ecodesign tools for sustainable product development and procurement. *Journal of Cleaner Production*, vol. 14, issue 15-16, 1420-1430.
3. Byggeth S. H., Broman G. and Robèrt K.-H., 2007. A method for sustainable product development based on a modular system of guiding questions. *Journal of Cleaner Production*, vol. 15, issue 1, 1-11.
4. Ny H., Hallstedt S., Robèrt K.-H. and Broman G., 2008. Introducing templates for sustainable product development through an evaluation case study of televisions at the Matsushita Electric Group. *Journal of Industrial Ecology*, vol 12, issue 4, 600-623.
5. Hallstedt S., Ny H., Robèrt K.-H. and Broman G., 2010. An approach to assessing sustainability integration in strategic decision systems. *Journal of Cleaner Production*. vol.18, 703–712.
6. Bratt, C., Hallstedt, S., Robèrt, K.-H., Broman, G. and Oldmark, J., 2011. Assessment of eco-labelling criteria development from a strategic sustainability perspective. *Journal of Cleaner Production*. vol.19, 1631-1638.
7. Thompson A., Lindahl P., Hallstedt S., Ny H., Broman G., 2011. Decision Support Tools for Sustainability in Product Innovation in a few Swedish Companies. In: *Proceedings of the Int. Conference on Research into Design, ICoRD'11*. 10-12 January, 2011, Indian Institute of Science, Bangalore, India.
8. Hallstedt S. and Thompson A., 2011. Sustainability driven product development -some challenges and opportunities for aero industry. In: *Proceedings of Int. Society for Airbreathing Engines, 20th ISABE Conference*, 12-16 September, 2011, Gothenburg, Sweden.

---

\* The surname *Byggeth* was changed to the surname *Hallstedt* in 2007

9. Bratt, C., Hallstedt, S., Robèrt, K.-H., Broman, G and Oldmark, J., 2011. Eco-labelling criteria development for strategic life cycle management. **Proceedings of the Life Cycle Management Conference – LCM 2011 – Towards Life Cycle Sustainability Management**, August 28th – 31<sup>st</sup>, 2011, Berlin, Germany.
10. Ny, H., Hallstedt, S., Ericson Å., 2012. A Strategic Approach for Sustainable Product Service System Development. In: **Proceedings of CIRP Design 2012 – Sustainable Product Development**, 28-30 March 2012, Indian Institute of Science, Bangalore, India.
11. Thompson, A. W. Hallstedt S., Isaksson O., 2012. Introductory approach for sustainability integration in conceptual design. In: **Proceedings of Int. design conference - DESIGN 2012**. Dubrovnik, Croatia, May 21 - 24, 2012.
12. Bratt C., Broman G., Robèrt K-H, Hallstedt S., 2012. Procurement as driver of sustainable product-service innovation. In: **Proceedings of 17th Int. Conference Sustainable Innovation**. Bonn, Germany. 29th-30th October 2012.
13. Bratt, C., Hallstedt, S., Robèrt, K.-H., Broman, G. and Oldmark, J., 2013. Assessment of criteria development for public procurement from a strategic sustainability perspective. **Journal of Cleaner Production**. vol. 52, 309–316.
14. Hallstedt S. Thompson A., Lindahl P., 2013. Key Elements for Implementing a Strategic Sustainability Perspective in the Product Innovation Process. **Journal of Cleaner Production**. vol. 51, 277-288.
15. Hallstedt S. and Isaksson O., 2013. Clarification of sustainability consequences of manufacturing processes in conceptual design. In: **Proceedings of the 19th Int. Conference on Engineering Design, ICED' 13**, 19-22 August, 2013. Seoul, Korea.
16. Hallstedt S., Thompson A., Isaksson O., Larsson T., Ny H., 2013. A decision support approach for modeling sustainability consequences in an aerospace value chain. In: **Proceedings of ASME, 18th Design for Manufacturing and the Life Cycle Conference (DFMLC)**, August 4-7, 2013, Portland, USA.
17. Bertoni M., Hallstedt S., Isaksson O., 2014. Value assessment of sustainability hotspots in conceptual design: an aerospace study. In: **Proceedings of Tools and Methods for Competitive Engineering (TMCE)**. May 19-23, 2014, Budapest, Hungary.
18. Hallstedt S., 2015. How to define a sustainability design space. In: **Proceedings of the 20th International Conference on Engineering Design (ICED)**. Milan, Italy, July 27-30, 2015.
19. Isaksson O., Bertoni M., Hallstedt S., Lavesson N., 2015. Model Based Decision Support for Value and Sustainability in Product Development. In: **Proceedings of the 20th Int. Conference on Engineering Design (ICED)**. Milan, Italy, July 27-30, 2015.
20. Hallstedt, S., Bertoni M., Isaksson O., 2015. Assessing sustainability and value of manufacturing processes: a case in the aerospace industry." **Journal of Cleaner Production** vol. 108, 169-182.
21. Bertoni M., Hallstedt S., Isaksson O., 2015. A model-based approach for sustainability and value assessment in the aerospace value chain. **Journal of Advances in Mechanical Engineering**, Special Issue on "Environmentally Conscious Technologies in Mechanical Engineering".
22. Mesquita L.P., Hallstedt S., Broman G., Isaksson O., 2016. An introductory approach to concretize social sustainability for sustainable manufacturing. In: **Proceedings of TMCE**, Aix-Provence, France, May 9-13, 2016.
23. Zetterlund H., Hallstedt S., Broman G., 2016. Implementation potential of sustainability-oriented decision support in product development. In: **Proceedings of the 26th CIRP Design Conference**. Stockholm, Sweden, June 14-17, 2016.
24. Hallstedt S., 2017. Sustainability Criteria and Sustainability Compliance Index for Decision Support in Product Development, **Journal of Cleaner Production**. vol. 140, 251–266.
25. Hallstedt S. and Isaksson O., 2017. Material criticality assessment in early phases of sustainable product development. **Journal of Cleaner Production**. vol.161, 40-52.
26. Jaghbeer, Y., Hallstedt, S.I., Larsson, T. and Wall, J., 2017. Exploration of simulation-driven support tools for sustainable product development. **Procedia CIRP**, 64, 271-276.
27. Hallstedt, S. and Pigosso, D., 2017. Sustainability integration in a technology readiness assessment framework. In: **Proceedings of the 21st International Conference on Engineering Design (ICED 17)**. Vancouver, Canada, 21-25 August, Vol 5.
28. Schulte, J. and Hallstedt, S., 2017. Challenges for integrating sustainability in risk management—current state of research. In: **Proceedings of the 21st International Conference on Engineering Design (ICED 17)** Vancouver, Canada, 21-25 August, Vol 2.
29. Jaghbeer, Y., Motyka, Y. and Hallstedt, S., 2017. A process for designing lean-and sustainable production. In: **Proceedings of the 21st International Conference on Engineering Design (ICED 17)** Vancouver, Canada, 21-25 August, Vol 1.
30. Schulte, J. and Hallstedt, S., 2017. Challenges and preconditions to build capabilities for sustainable product design. In: **Proceedings of the 21st International Conference on Engineering Design (ICED 17)** Vancouver, Canada, 21-25 August, Vol 1.