

1. **Personal data:** Piili, (Malmberg), Heidi Maria; Female; Email: heidi.piili@utu.fi; Tel: +358 50 473 4723; LinkedIn: <https://www.linkedin.com/in/heidi-piili-n%C3%A9-malmberg-104a1313/> ; personal webpage at UTU: <https://www.utu.fi/en/people/heidi-piili>; ORCID: <https://orcid.org/0000-0002-5594-6253>; ResearchGate: <https://www.researchgate.net/profile/Heidi-Piili>; Born: December 27th, 1976, Inkoo; Citizenship: Finnish (Imatra, Finland).
2. **Education and degrees awarded:** 2023 (dissertation on 14.12.2023): Doctor of Science (Technology) Degree, Topic of Doctoral Thesis: "A conceptual, holistic framework to overcome limitations and constraints of design in laser based powder bed fusion of metals: Case novel separation and purification units", Department of Separation Science, LUT University, Finland; 2022-: Docent, "Laser beam and material interaction in laser based additive manufacturing", University of Turku, Finland; 2022-: Docent, "Industrial Applications of Laser Processing and Additive Manufacturing", University of Oulu, Finland, 2021: Professor (Laser Material Processing and Additive Manufacturing), LUT University, Finland, 3/20-8/21; 2017-2022: Docent, "Monitoring of additive manufacturing of metallic materials", LUT University, Finland; 2015: Professional Teacher Degree, Häme University of Applied Sciences, Finland; 2013: Doctor of Science (Technology) Degree, Topic of Doctoral Thesis: "Characterization of laser beam and paper material interaction", Laser Materials Processing, LUT University, Finland; 2009: Licentiate of Science (Technology) Degree, Topic of Licentiate Thesis: "Characterization of interaction of laser beam and paper materials in cutting", Laser Materials Processing, LUT University, Finland; 2003: Master of Science (Technology) Degree, Topic of Master's Thesis: "Characterization of laser cutting of consumer packaging board", Chemical Engineering, LUT University, Finland.
3. **Current position:** Adjunct Professor, Senior Research Scientist, Research Group of Digital Manufacturing and Surface Engineering (DMS), Department of Mechanical and Materials Engineering, University of Turku, since 9.8.2021.
4. **Previous work experience:** 2020-2021: Professor and responsible leader of R&D group of "Laser Materials Processing and Additive Manufacturing" (14 member R&D group), 9.3.2020-8.8.2021; 2018-2020: Research Scientist (Docent), Laser Materials Processing, LUT University, Finland; 2017: R&D Engineer, EOS Finland, Turku, Finland; 2013-2017: Post-Doctoral Research Scientist, Laser Materials Processing, LUT University, Finland; 2008-2013: Junior Research Scientist, Laser Materials Processing, LUT University, Finland; 2003-2007: Junior Research Scientist, Laser Materials Processing, LUT University, Finland; 2002-2003: Master Thesis Worker, Laser Materials Processing, LUT University, Finland.
5. **Leave of absences:** 2017: Leave of absence from vacancy of Post-Doctoral Research Scientist at LUT University to do R&D exchange to EOS Finland (12 months); 2012: Leave of absence for Grant of Foundation of LUT University for finalizing doctoral thesis (5 months); 2007-2008: Maternity leave (9 months).
6. **Research funding:** Yhdessä Vakadigiin!, Ministry of Education of Finland, 75k€, 1.8.2023-30.6.2024, project director; Turun lisäävän valmistuksen osaamisen innovaatiokeskittymä (Turku Innovation Centre of Additive Manufacturing, TICAM), "Kestävästi lisäävää!", Uudenmaan Liitto (European Regional Development Fund), Kestävän kaupunkikehittämisen haku - Turun ekosysteemisopimus (Sustainable urban development call – Agreement in Turku ecosystem), 1.1.2023-28.2.2025, 200 k€, responsible leader of subproject; Varhaiskasvatuksen digiosajaksi! "Vakadigi", Ministry of Education of Finland, 26k€, 1.1.2022-30.6.2023, sub-project director; Responsible leader of all projects in LUT Laser&AM 9.3.2020-8.8.2021; Verkostoitumisella voimaa 3D-tulostukseen-Strength to Industrial AM via Networking and R&D (VERKOTA), ERDF, 197 k€, Virtual learning environment for 3D-metal printing, "3D-ACCELERATOR – AMASI", EIT RawMaterials, 1.1.2020 – 31.12.2023, 470 k€, PI; Virtual learning environment for 3D-metal printing – preface, "PRE3DACC", EIT Raw Materials, 1.9.2019-31.12.2019, 50 k€, sub-project manager; Recovery of gold from waste utilizing AM, "ReGold-AM", Academy of Finland, 1.9.2019-31.8.2023, 387 k€, PI; Chief Expert in Engineering, "CEE", European Social Fund, 1.5.2019-30.4.2021, 60 k€, PI; 3D printing for Industry (Me3DI), ERDF, 364k€, PI; Digitalized welding procedures (DigRob), Business Finland, 250k€, 1.2.2018-31.12.2019, PI; Metallialan alihankinnat ja 3D-tulostuksen kehittäminen (Subcontracting in metal industries and development of 3D printing), "3DIT!", Lappeenranta, 100 k€, 15.2.2018 - 31.12.2018, 100k€, PI; Manufacturing 4.0, Strategic Research Council of Finland, 1.12 M€, 1.1.2018-31.12.2023, Sub-project director; Micro- and mill structured reactors for catalytic oxidation reactions, "Micatox". Academy of Finland, 2016-2017, 350 k€, sub-project manager; 3D Navetta, Cursor, 427 k€, 2015-2016, sub-project manager; Manu P6/2, Fimecc Oy/Tekes, 210k€, 2014-2015, sub-project manager (1.8.2014-30.10.2015); Art residence for creation of feeling based value by advanced manufacturing, "Lares", Tekes, 254 k€, 2014-2015, sub-project manager (1.1.2014-28.2.2015); Industrial application of additive manufacturing, "Kaglam", Industrial company, 80k€, 2013-2014, project manager.



7. **Leadership and supervision experience:** Responsible leader of R&D group of Laser Materials Processing and Additive Manufacturing (LUT Laser&AM) 9.3.20-8.8.21, responsible leader of all projects in LUT Laser&AM 9.3.20-8.8.21, responsible leader of all courses and education (B.Sc., M.Sc. and D.Sc. level) of Laser Material Processing and Additive manufacturing at LUT University since 9.3.2020, supervisor of 14 member R&D team 9.3.20-8.8.21. Supervised post-doctoral researchers: Francois Bayock, LUT University, 2020, Anna Unt, LUT University, 2020-2021; Mohsen Amraei, 2021. Doctoral thesis supervision: Patricia Nyamekye, LUT University, 2021; Ari Pikkarainen, LUT University, 2021; Francois Bayock, LUT University, 2020. Opponent in licentiate thesis: Olutayo Adegoke, University West, 2020. Member of examining committee of doctoral thesis: Olutayo Adegoke, University West, 2021, Sneha Goel, University West, 2020. Doctoral thesis instructor experience: Alexander Stepanov 2015; Doctoral thesis pre-examiner: Ville Klar, Aalto University, 2019. Currently under supervision of 8 D.Sc. students. Experience as officially appointed supervisor of 20 M.Sc. students and advisor of 17. Experience as officially appointed supervisor of 15 B.Sc. students and advisor of 6.
8. **Merits in teaching and pedagogical competence:** Undergraduate courses since 2002: 18 courses; post-graduate courses since 2017: 2 courses; professional teacher degree, HAMK, 2015; participation into 17 pedagogical courses; 13 pedagogical publication; 8 educational projects 2018-2023.
9. **Scientific and societal impact of research:** 40 peer-reviewed refereed journal articles, 5 peer-reviewed review articles, 3 sections in research book, 18 peer-reviewed conference proceedings, 61 non-refereed conference proceedings, 15 articles in a trade journal, 13 published development or research report or study, and 4 theses (totally 159 publications); H-index by Heidi Piili (according to Google Scholar): 18, h-index by Heidi Piili (according to Scopus): 15, h-index by maiden name Heidi Malmberg (according to Scopus): 3, citations by Heidi Piili (according to Google Scholar): 1819, citations by Heidi Piili (according to Scopus): 913, citations by maiden name Heidi Malmberg (according to Scopus): 12; Writing chapter “Lisäävän valmistuksen nykytilanne ja tulevaisuus Suomessa” for book “Valmistava teollisuus 4.0: Yhteiskunta, Talous, Teknologia - Haasteet ja mahdollisuudet”; Writing chapter “Simulation and Its Use in Additive Manufacturing.” in: Neittaanmäki, P., Rantalainen, ML. (eds) Impact of Scientific Computing on Science and Society. Computational Methods in Applied Sciences, vol 58. Springer, Cham. Writing chapter “Additive Manufacturing - Past, Present, and the Future” for book “Technical, Economic, and Societal Effects of Manufacturing 4.0 - Automation, Adaption, and Manufacturing in Finland and Beyond”, Palgrave McMillan, 2020, London, UK.
10. **Organization of academic meeting:** 2024: Member of International Review Committee of 12th CIRP Conference on Photonic Technologies (LANE 2024); 2023: Chair of National Organizing Committee of The 19th Nordic Laser Materials Processing Conference - NOLAMP19, which was held 22-24 August 2023 in Turku, Finland; 2022: Conference Chairman and member of national organizing committee of conference of The 19th Nordic Laser Materials Processing Conference - NOLAMP19, which will be held 8/23 at Turku, Finland; Scientific reviewer in Advanced Project in Development of Master Programme in Welding (AMWELD), University West, Sweden. 2022: Member of International Review Committee of LANE 2022; Member of Steering Group of ICALEO conference. 4/2021: Member of scientific committee of conference of The 18th Nordic Laser Materials Processing Conference - NOLAMP18, which was held in 18-20th January 2022 at Luleå, Sweden.; Chairman and main organizer of “Metallien 3D-tulostuksen ajankohtaisseminaari” 3.12.2020, LUT University; Chairman of session “Robotic welding and other technology” in conference of International Conference on Design and Manufacturing of Arctic Structures – DMAS - 2019, 2.10.2019, LUT University; Member of scientific committee of conference of International Conference on Design and Manufacturing of Arctic Structures – DMAS - 2019, 2.10.2019, LUT University; Chairman of session “Additive Manufacturing” in conference of The 17th Nordic Laser Materials Processing Conference - NOLAMP17, 27.8.-29.8.2019, Trondheim, Norway; Member of scientific committee of conference of The 17th Nordic Laser Materials Processing Conference - NOLAMP17, 27.8.-29.8.2019, Trondheim, Norway; Member of organizer and scientific committee of conference of The 15th Nordic Laser Materials Processing Conference - NOLAMP15, 25.8.-27.8.2015, LUT University; Member of organizer committee of largest Finnish 3D printing seminar “Firpa vuosiseminaari”, 13.5.2014, LUT University.
11. **Awards and certificates:** “Certificate of Good Academic Leadership for Principal Investigators programme”, GALPI, University of Turku, 24.1.-7.6.2022; “Certificate of 3-day basic training of SLM machine”, 14.4.2022; “Certificate of Qualification/Training: Operation of System EOS M290”, 15.11.2019; Metso Mechanical Pulping Award for doctoral thesis, 15.11.2013.
12. **Memberships and positions of trust in scientific societies:** 2023: Vice Chairman of board of Photonics Finland; 2022-23: Conference Chairman and member of national organizing committee of conference of The 19th Nordic Laser Materials Processing Conference - NOLAMP19, which will be held 8/23 at Turku, Finland; 2020- member of steering group of ICALEO conference; 2020-: member of board of Photonics Finland; 2019-: member of Society of Welding

Technology of Finland and vice chairman (2022-) of Laser Forum of this society (Suomen hitsausteknillinen yhdistys); 2014-2021: representative of Finland in ISO standardization committee for Advanced Manufacturing Technologies; 2011-: member of Finnish Rapid Prototyping Association (FIRPA); 2009- : member of Laser Institute of America (LIA); 2005-: member of Paper Engineer's Association (Paperi-Insinöörit ry).

13. **Other key scientific or academic merits:** Member of advisory board of "Osuu&uppoaa"-project 8/2021-; Member of board of Photonics Finland 6/2020-; EU project evaluator 8/2019-8/2021; Representative of Finland in standardization of additive manufacturing, ISO/TC 261, in following work groups (WGs): WG1 Terminology, WG2 Methods, processes and materials, WG3 Test methods and WG4 Design and data 2013-2021; Completing course of Laser Technology Expert, European Welding Federation, EWF, LUT University, 15.12.2003; Regular reviewer in journals: International Journal of Hydrogen Energy and Journal for Optics and Laser Technology; Member of advisory board of Fine Arts of Saimaa University of Applied Sciences 2018-2021; Member of advisory board of "Amber"-project 9/2018-6/2021; Member of advisory board of "digiValmistus"-project since 10/2018-6/2020.