
List of publications

1 (15)

*Piili, Heidi Maria***A. Peer-reviewed scientific articles****A1. Journal article (refereed), original research**

- 1.1 Widmaier, T., Juhanko, J., Piili, H., Kontio, J., Happonen, A., Kuosmanen, P., Salminen, A. and Nyrhilä, O., Versatile design process of customized product with additive manufacturing technologies, Estonian Journal of Engineering, Volume 19, 2012, pp. 76-89. JUFO 1.
- 1.2 Piili, H., Widmaier, T., Happonen, A., Juhanko, J., Salminen, A., Kuosmanen, P., Nyrhilä, O., Digital design process and additive manufacturing of a configurable product, Advanced Science Letters, Volume 19, Issue 3, March 2013, pp. 926-931(6). JUFO 1.
- 1.3 Stepanov, A., Islam, M.E., Taimisto, L., Piili, H., Nyrhilä, O., Salminen, A., Comparison of Theoretical and Practical Studies of Energy Input in Laser Additive Manufacturing (LAM) Using Stainless Steel. Lasers in Engineering. 28 (2014), (5-6), pp. 289-302. JUFO 1.
- 1.4 Qian, B., Taimisto, L., Lehti, A., Piili, H., Nyrhilä, O., Salminen, A., Shen, Z., Monitoring of temperature profiles and surface morphologies during laser sintering of alumina ceramics. Journal of Asian Ceramic Societies, Volume 6, 2014, 9 p. JUFO 0.
- 1.5 Scotti, G., Kanninen, P., Matilainen, V-P., Piili, H., Salminen, A., Kallio, T., Franssila, S., Laser additive manufacturing of Stainless Steel Micro Fuel Cells. Journal of Power Sources, Vol. 272, 25 December 2014, Pages 356–361. JUFO 2.
- 1.6 Weber, J., Wain, A., Matilainen, V., Piili, H., Vuorema, A., Attard, G., Marken, F., Residual Porosity of 3D-LAM-Printed Stainless-Steel Electrodes Allows Galvanic Exchange Platinisation, ChemElectroChem (2016). Vol. 3, pp. 1-7. JUFO 1.
- 1.7 Litherland, A., Spurway, L., Gordeev, S., Aaronson, B. Wain, A., O'Connell, A., Piili, H., Hovilehto, M., Matilainen. V-P, Vuorema, A., Marken, F., Galvanic exchange platinization reveals laser-inscribed pattern in 3D-LAM-printed steel, Journal of Solid State Electrochemistry, Volume 3, 2018, No. 6, pp. 1020-1025. JUFO 1.
- 1.8 Pikkarainen, A. Piili H. Implementing 3D printing education through technical pedagogy and curriculum development. International Journal of Engineering Pedagogy (iJEP), 10(6), pp. 95-119. JUFO 1.
- 1.9 Riikonen, N., Piili H., Characterization of part deformations in laser powder bed fusion of stainless steel 316L, 11th CIRP Conference on Photonic Technologies LANE 2020. September 6-10, 2020. 161-166. JUFO 1.
- 1.10 Heiskanen, A., Repo, E., Piili, H., Design of electrode for electrochemical gold separation process manufactured via laser-based powder bed fusion, 11th CIRP Conference on Photonic Technologies LANE 2020. September 6-10, 2020. 398-403. JUFO 1.
- 1.11 Kivirasi, E., Piili, H., Kotila, J., Minet, K., Detecting spattering phenomena by using high-speed imaging in L-PBF of 316L, 11th CIRP Conference on Photonic Technologies LANE 2020. September 6-10, 2020. 398-403. JUFO 0.

- 1.12 Pikkarainen, A., Piili H., Salminen, A. (2020) The design process of an occupationally safe and functional 3D printing learning environment for engineering education. *European Journal of Education Studies*, Vol. 7 , No. 12, pp. 80-105. JUFO 1.
- 1.13 Pikkarainen, A., Piili, H., Salminen, A., Introducing Novel Learning Outcomes and Process Selection Model for Additive Manufacturing Education in Engineering. *European Journal of Education Studies* Volume 8, Issue 1, 2021. DOI: 10.46827/ejes.v8i1.3511. JUFO 1.
- 1.14 Pikkarainen, A., Piili, H., Salminen, A. (2021). Perspectives of Mechanical Engineering Students to Learning of Additive Manufacturing -Learning through Multiple Technologies. *International Journal of Innovation and Research in Educational Sciences*, 8(1). https://www.ijires.org/administrator/components/com_jresearch/files/publications/IJIRES_1_814_FINAL.pdf. JUFO 1.
- 1.15 Afkhami, A., Dabiri, E., Lipiäinen, K., Piili, H., Björk, T. (2021) Effects of notch-load interactions on the mechanical performance of 3D printed tool steel 18Ni300, *Additive Manufacturing*, Volume 47, 102260, ISSN 2214-8604, <https://doi.org/10.1016/j.addma.2021.102260>. JUFO 2.
- 1.16 Afkhami, S., Dabiri, M., Piili, H., Björk, T. (2021). Effects of manufacturing parameters and mechanical post-processing on stainless steel 316L processed by laser powder bed fusion. *Materials Science and Engineering: A*, 802, 140660. <https://doi.org/10.1016/j.msea.2020.140660>. JUFO 2.
- 1.17 Zhang, R., Buchanan, C., Matilainen, V-P., Daskalaki-Mountanou, D., Britton, T.B., Piili, H., Salminen, A., Gardner, L. (2021) Mechanical properties and microstructure of additively manufactured stainless steel with laser welded joints, *Materials & Design*, Volume 208, 109921, ISSN 0264-1275, <https://doi.org/10.1016/j.matdes.2021.109921>. JUFO 2.
- 1.18 Zhang, R., Gardner, L., Buchanan, C., Matilainen, V.-P., Piili, H., Salminen, A. (2021). Testing and analysis of additively manufactured stainless steel CHS in compression. *Thin-Walled Structures*, 159, 107270. <https://doi.org/10.1016/j.tws.2020.107270>. JUFO 2.
- 1.19 Zhang, R., Gardner, L., Meng, X., Buchanan, C., Matilainen, V-P., Piili, H., Salminen, A. (2021) Optimisation and compressive testing of additively manufactured stainless steel corrugated shells. *ce/papers*, <https://doi.org/10.1002/cepa.1492>. No JUFO ranking.
- 1.20 Afkhami, S., Amraei, M., Gardner, L., Piili, H., Wadee, M. A., Salminen, A., Björk, T.. Mechanical performance and design optimization of metal honeycombs fabricated by laser powder bed fusion. 2021. Submitted *Thin-Walled Structures*. JUFO 2.
- 1.21 Afkhami, S., Javaheri, V., Amraei, M., Skriko, T., Piili, H., Zhao, X-L, Björk, T. (2022) Thermomechanical simulation of the heat-affected zones in welded ultra-high strength steels: Microstructure and mechanical properties, *Materials & Design*, Volume 213, 110336, ISSN 0264-1275. JUFO 2.
- 1.22 Afkhami, S., Javaheri, V., Dabiri, E., Piili, H., Björk, T. (2022) Data related to the microstructural identification and analyzing the mechanical properties of maraging stainless steel 13Cr10Ni1.7Mo2Al0.4Mn0.4Si (commercially known as CX) processed by laser powder bed fusion method, *Data in Brief*, Volume 41, 107856, ISSN 2352-3409, <https://doi.org/10.1016/j.dib.2022.107856>. JUFO 1.

- 1.23 Afkhami, S., Amraei, M., Gardner, L., Piili, H., Wadee, M.A., Salminen, A., Björk, T. (2022) Mechanical performance and design optimisation of metal honeycombs fabricated by laser powder bed fusion, *Thin-Walled Structures*, Volume 180, 109864, ISSN 0263-8231, <https://doi.org/10.1016/j.tws.2022.109864>. JUFO 2.
- 1.24 Ghafouri, M., Amraei, M., Pokka, A-K., Björk, T., Larkiola, J., Piili, H., Zhao, X-L. (2022) Mechanical properties of butt-welded ultra-high strength steels at elevated temperatures, *Journal of Constructional Steel Research*, Volume 198, 107499, ISSN 0143-974X, <https://doi.org/10.1016/j.jcsr.2022.107499>. JUFO 2.
- 1.25 Saariluoma, H., Piironen, A., Immonen, E., Piili, H., Salminen, A. (2022) Designing of aluminium case lid of prismatic battery cell for laser powder bed fusion, *Journal of Laser Applications* 34, 042025, <https://doi.org/10.2351/7.0000743>. JUFO 1.
- 1.26 Pastushok, O., Kivijärvi, L., Laakso, E., Haukka, M., Piili, H., Repo, E. (2023). Electrochemical properties of graphite/nylon electrodes additively manufactured by laser powder bed fusion. *Electrochimica Acta*, 440, Article 141732. <https://doi.org/10.1016/j.electacta.2022.141732>. JUFO 2.
- 1.27 Nyamekye, P., Rahimpour, S., Piili, H., Kraslawski, A., Luukka, P. (2023) Impact of additive manufacturing on titanium supply chain: Case of titanium alloys in automotive and aerospace industries. *Advances in Industrial and Manufacturing Engineering*, 6, 100112, <https://doi.org/10.1016/j.aime.2023.100112>. JUFO 1.
- 1.28 Lakshmanan, R., Nyamekye, P., Virolainen, V.M., Piili, H. (2023) The convergence of lean management and additive manufacturing: Case of manufacturing industries. *Cleaner Engineering and Technology*. Volume 13, 100620, ISSN 2666-7908, <https://doi.org/10.1016/j.clet.2023.100620>. JUFO 1.
- 1.29 Afkhami, S., Amraei, M., Poutiainen I., Gardner, L., Piili, H., Wadee M. A., Salminen A., Björk T. (2023) Data related to the manufacturing and mechanical performance of 3D-printed metal honeycombs. *Data in Brief*. Volume 36, ISSN 2352-3409, <https://doi.org/10.1016/j.dib.2022.108857>. JUFO 1.
- 1.30 Huusko, A., Kurvinen, A., Piili, H. (2023) Preliminary study of knowledge transfer aspect in the creation of a framework for education and training of digital manufacturing technologies. *IOP Conference Series: Materials Science and Engineering*, NOLAMP-Nordic Laser Materials Processing Conference (19TH-NOLAMP-2023) 22/08/2023 - 24/08/2023 Turku, Finland, Volume 1296, 012002. DOI 10.1088/1757-899X/1296/1/012002. JUFO 1.
- 1.31 Huusko, A., Kurvinen, A., Pikkarainen, A., Piili, H. (2023) The meaning of knowledge transfer in educating engineers for modern manufacturing technologies. *IOP Conference Series: Materials Science and Engineering*, NOLAMP- Nordic Laser Materials Processing Conference (19TH-NOLAMP-2023) 22/08/2023 - 24/08/2023 Turku, Finland, Volume 1296, 012003. DOI 10.1088/1757-899X/1296/1/012003. JUFO 1.
- 1.32 Huusko, A., Susi, J., Parchegani, S., Hosseini, H., Tuomisto, A., Helin, A., Piili, H., Salminen A. (2023) Virtual Reality-Based Training in Additive Manufacturing: Developing a Service Concept that Adapts to Company-Specific Requirements. *IOP Conference Series: Materials Science and Engineering*, NOLAMP- Nordic Laser Materials Processing

- Conference (19TH-NOLAMP-2023) 22/08/2023 - 24/08/2023 Turku, Finland, Volume 1296, 012004. DOI 10.1088/1757-899X/1296/1/012004. JUFO 1.
- 1.33 Haapa, E., Gopaluni, A., Piili, H., Ganvir, A., Salminen, A., Ottelin, J. (2023) Validation of powder layering simulation via packing density measurement for laser-based powder bed fusion. IOP Conference Series: Materials Science and Engineering, NOLAMP- Nordic Laser Materials Processing Conference (19TH-NOLAMP-2023) 22/08/2023 - 24/08/2023 Turku, Finland, Volume 1296, 012020. DOI 10.1088/1757-899X/1296/1/012020. JUFO 1.
- 1.34 Kamboj, N., Piili, H., Ganvir, A., Gopaluni, A., Nayak, C., Moritz, N., Salminen, A. (2023) Bioinert ceramics scaffolds for bone tissue engineering by laser-based powder bed fusion: a preliminary review. IOP Conference Series: Materials Science and Engineering, NOLAMP- Nordic Laser Materials Processing Conference (19TH-NOLAMP-2023) 22/08/2023 - 24/08/2023 Turku, Finland, Volume 1296, 012022. DOI 10.1088/1757-899X/1296/1/012022. JUFO 1.
- 1.35 Heilala, J., Parchegani, S., Piili, H. (2023) Additive manufacturing systems integration. IOP Conference Series: Materials Science and Engineering, NOLAMP- Nordic Laser Materials Processing Conference (19TH-NOLAMP-2023) 22/08/2023 - 24/08/2023 Turku, Finland, Volume 1296, 012024. DOI 10.1088/1757-899X/1296/1/012024. JUFO 1.
- 1.36 Heilala, J., Parchegani, S., Piili, H. (2023) Additive manufacturing systems integration. IOP Conference Series: Materials Science and Engineering, NOLAMP- Nordic Laser Materials Processing Conference (19TH-NOLAMP-2023) 22/08/2023 - 24/08/2023 Turku, Finland, Volume 1296, 012024. DOI 10.1088/1757-899X/1296/1/012024. JUFO 1.
- 1.37 Lindqvist, M., Kivirasi, E., Lipiäinen, K., Piili, H., Salminen, A. (2023) Effect of post-weld heat treatment on heat affected zone microstructure of additively manufactured Inconel 718. IOP Conference Series: Materials Science and Engineering, NOLAMP- Nordic Laser Materials Processing Conference (19TH-NOLAMP-2023) 22/08/2023 - 24/08/2023 Turku, Finland, Volume 1296, 012027. DOI 10.1088/1757-899X/1296/1/012027. JUFO 1.
- 1.38 Lindqvist, M., Kivirasi, E., Lipiäinen, K., Piili, H., Salminen, A. (2023) Effect of heat treatment in dissimilar welds of additively manufactured laser welded 316L-Inconel 718 joints. IOP Conference Series: Materials Science and Engineering, NOLAMP- Nordic Laser Materials Processing Conference (19TH-NOLAMP-2023) 22/08/2023 - 24/08/2023 Turku, Finland, Volume 1296, 012031. DOI 10.1088/1757-899X/1296/1/012031. JUFO 1.
- 1.39 Kivirasi, E., Lindqvist, M., Lipiäinen, K., Piili, H., Salminen, A. (2023) The effects of laser welding parameters on weldability and quality of the microstructure of additively manufactured Inconel 718-316L joints. IOP Conference Series: Materials Science and Engineering, NOLAMP- Nordic Laser Materials Processing Conference (19TH-NOLAMP-2023) 22/08/2023 - 24/08/2023 Turku, Finland, Volume 1296, 012032. DOI 10.1088/1757-899X/1296/1/012032. JUFO 1.
- 1.40 Parchegani, S., Piili, H., Ganvir, A., Salminen, A. (2023) Laser welding of additively manufactured parts - A review. IOP Conference Series: Materials Science and Engineering, NOLAMP- Nordic Laser Materials Processing Conference (19TH-NOLAMP-2023) 22/08/2023 - 24/08/2023 Turku, Finland, Volume 1296, 012030. DOI 10.1088/1757-899X/1296/1/012030. JUFO 1.

A2. Review article, Literature review, Systematic review

- 2.1 Salminen, A., Piili, H., Purtonen, T., The characteristics of high power fibre laser welding. Proc. IMechE Vol. 224 Part C: J. Mechanical Engineering Science, Professional Engineering Publishing, Volume 224, Issue 5 / 2010, ISSN 0954-4062, pp. 1019-1029. JUFO 1.
- 2.2 Nyamekye, P., Leino, M., Piili, H., Salminen, A. (2015) Overview of Sustainability Studies of CNC Machining and LAM of Stainless Steel, Physics Procedia, Volume 78, Pages 367-376, ISSN 1875-3892, <https://doi.org/10.1016/j.phpro.2015.11.051>. JUFO 1.
- 2.3 Nyamekye, P., Unt, A., Salminen, A., Piili, H. (2020) Integration of Simulation Driven DfAM and LCC Analysis for Decision Making in L-PBF, Metals 10, no. 9, 1179. <https://doi.org/10.3390/met10091179>. JUFO 1.
- 2.4 Nyamekye, P., Nieminen, P., Bilesan, M. R., Repo, E., Piili, H., Salminen, A. (2021). Prospects for laser based powder bed fusion in the manufacturing of metal electrodes: A review. Applied Materials Today, 23, 101040. <https://doi.org/10.1016/j.apmt.2021.101040>, JUFO 1.
- 2.5 Zhang, R., Gardner, L., Amraei, M., Buchanan, C., Piili, H. (2023) Testing and Analysis of Additively Manufactured Stainless Steel Corrugated Cylindrical Shells in Compression. Journal of Engineering Mechanics ASCE, Volume 149, Issue 4, <https://doi.org/10.1061/JENMDT.EMENG-6841>, JUFO 1.

A3. Book section, Chapters in research books

- 3.1 Korpela, M., Riikonen, N., Piili, H., Salminen, A. and Nyrhilä, O., 2020, Additive Manufacturing—Past, Present, and the Future, in Collan, M. and Michelsen, K-E. (Eds.), Technical, Economic, and Societal Effects of Manufacturing 4.0 - Automation, Adaption, and Manufacturing in Finland and Beyond, Palgrave McMillan, London, UK. JUFO 3.
- 3.2 Piili, H., Salminen, A., 2022, Lisäävän valmistuksen nykytilanne ja tulevaisuus Suomessa, in Collan, M. and Michelsen, K-E. (Eds.), Valmistava teollisuus 4.0: Yhteiskunta, Talous, Teknologia - Haasteet ja mahdollisuudet. In peer-review.
- 3.3 Ghafouri, M., Amraei, M., Gopaluni, A., Piili, H., Björk, T., Hämäläinen, J. (2023) 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. https://doi.org/10.1007/978-3-031-29082-4_6, JUFO 1.

A4. Peer-reviewed conference proceedings

- 4.1 Islam, M., Purtonen, T., Piili, H., Salminen, A., Nyrhilä, O. (2013) Temperature Profile and Imaging Analysis of Laser Additive Manufacturing of Stainless Steel, Physics Procedia, Volume 41, Pages 835-842, ISSN 1875-3892, <https://doi.org/10.1016/j.phpro.2013.03.156>. JUFO 1.

- 4.2 Järvinen, J-P., Matilainen, V., Li, X., Piili, H., Salminen, A., Mäkelä, I., Nyrhilä, O. (2014) Characterization of Effect of Support Structures in Laser Additive Manufacturing of Stainless Steel, *Physics Procedia*, Volume 56, Pages 72-81, ISSN 1875-3892, <https://doi.org/10.1016/j.phpro.2014.08.099>. JUFO 1.
- 4.3 Matilainen, V., Piili, H., Salminen, A., Syvänen, T., Nyrhilä, O. (2014) Characterization of Process Efficiency Improvement in Laser Additive Manufacturing, *Physics Procedia*, Volume 56, Pages 317-326, ISSN 1875-3892, <https://doi.org/10.1016/j.phpro.2014.08.177>. JUFO 1.
- 4.4 Stepanov, A., Saukkonen, E., Piili, H., Salminen, A. (2015) Effect of Moisture Content of Paper Material on Laser Cutting, *Physics Procedia*, Volume 78, Pages 120-127, ISSN 1875-3892, <https://doi.org/10.1016/j.phpro.2015.11.024>. JUFO 1.
- 4.5 Mäkinen, M., Jauhiainen, E., Matilainen, V-P., Riihimäki, J., Järnvalta, J., Piili, H., Salminen, A. (2015) Preliminary Comparison of Properties between Ni-electroplated Stainless Steel Parts Fabricated with Laser Additive Manufacturing and Conventional Machining, *Physics Procedia*, Volume 78, Pages 337-346, ISSN 1875-3892, <https://doi.org/10.1016/j.phpro.2015.11.048>. JUFO 1.
- 4.6 Karne, A., Kallonen, A., Matilainen, V-P., Piili, H., Salminen, A. (2015) Possibilities of CT Scanning as Analysis Method in Laser Additive Manufacturing, *Physics Procedia*, Volume 78, Pages 347-356, ISSN 1875-3892, <https://doi.org/10.1016/j.phpro.2015.11.049>. JUFO 1.
- 4.7 Matilainen, V-P., Piili, H., Salminen, A., Nyrhilä, O. (2015) Preliminary Investigation of Keyhole Phenomena during Single Layer Fabrication in Laser Additive Manufacturing of Stainless Steel, *Physics Procedia*, Volume 78, Pages 377-387, ISSN 1875-3892, <https://doi.org/10.1016/j.phpro.2015.11.052>. JUFO 1.
- 4.8 Piili, H., Happonen, A., Väistö, T., Venkataramanan, V., Partanen, J., Salminen, A. (2015) Cost Estimation of Laser Additive Manufacturing of Stainless Steel, *Physics Procedia*, Volume 78, Pages 388-396, ISSN 1875-3892, <https://doi.org/10.1016/j.phpro.2015.11.053>. JUFO 1.
- 4.9 Piili, H. (2015) A Theory of Interaction Mechanism between Laser Beam and Paper Material, *Physics Procedia*, Volume 78, Pages 163-173, ISSN 1875-3892, <https://doi.org/10.1016/j.phpro.2015.11.029>. JUFO 1.
- 4.10 Happonen, A., Stepanov, A., Piili, H., Salminen, A. (2015) Innovation Study for Laser Cutting of Complex Geometries with Paper Materials, *Physics Procedia*, Volume 78, Pages 128-137, ISSN 1875-3892, <https://doi.org/10.1016/j.phpro.2015.11.025>. JUFO 1.
- 4.11 Lindqvist, M., Piili, H., Salminen, A. (2016) Benchmark Study of Industrial Needs for Additive Manufacturing in Finland, *Physics Procedia*, Volume 83, Pages 854-863, ISSN 1875-3892, <https://doi.org/10.1016/j.phpro.2016.08.089>. JUFO 1.
- 4.12 Nyamekye, P., Piili, H., Leino, M., Salminen, A., (2017) Preliminary Investigation on Life Cycle Inventory of Powder Bed Fusion of Stainless Steel, *Physics Procedia*, Volume 89, Pages 108-121, ISSN 1875-3892, <https://doi.org/10.1016/j.phpro.2017.08.017>. JUFO 1.
- 4.13 Pikkarainen, A., Salminen, A., Piili, H. (2017) Creating Learning Environment Connecting Engineering Design and 3D Printing, *Physics Procedia*, Volume 89, Pages 122-130, ISSN 1875-3892, <https://doi.org/10.1016/j.phpro.2017.08.020>. JUFO 1.

- 4.14 Leino, M., Grönman, K., Uusitalo, V., Piili, H., Soukka, R., Systematic approach for identifying possible greenhouse gas emission reduction possibilities with additive manufacturing, ISDRS 2018 – The 24th International Sustainable Development Research Society Conference, Messina, Italy, June 13-15, 2018.
- 4.15 Laitinen, V., Piili, H., Nyamekye, P., Ullakko, K., Salminen, A. (2019) Effect of process parameters on the formation of single track in pulsed laser powder bed fusion, *Procedia Manufacturing*, Volume 36, Pages 176-183, ISSN 2351-9789, <https://doi.org/10.1016/j.promfg.2019.08.023>. JUFO 1.
- 4.16 Afkhami, S., Piili, H., Salminen, A., Björk, T. (2019) Effective parameters on the fatigue life of metals processed by powder bed fusion technique: A short review, *Procedia Manufacturing*, Volume 36, Pages 3-10, ISSN 2351-9789, <https://doi.org/10.1016/j.promfg.2019.08.002>. JUFO 1.
- 4.17 Zhang, R., Gardner, L., Meng, X., Buchanan, C., Matilainen, V-P., Piili, H., Salminen, A. (2021) Optimisation and compressive testing of additively manufactured stainless steel corrugated shells, EUROSTEEL 2021 - 9th European Conference on Steel and Composite Structures, Sheffield, UK, 2 Sep 2021, <https://doi.org/10.1002/cepa.1492>. JUFO 1.
- 4.18 Zhang, R., Amraei, M., Piili, H., Gardner, L. (2022) Microstructure, Mechanical Properties and Cross-sectional Behaviour of Additively Manufactured Stainless Steel Cylindrical Shells, SDSS 2022 - The International Colloquium on Stability and Ductility of Steel Structures, Aveiro, Portugal, 14-16, September 2022, DOI: 10.1002/cepa.1792. JUFO 1.

B. Non-refereed scientific articles

B3. Non-refereed conference proceedings

- 3.1 Hovikorpi, J., Malmberg, H., Laakso, P., Kujanpää, V., Miikki, N., Laser cutting of pulps, *Pulpaper 2004*, June 1.-3., 2004, Helsinki, Finland.
- 3.2 Laakso, P., Hovikorpi, J., Malmberg, H., Kujanpää, V., Miikki, N., Laser cutting of solid boards, *Proceedings of the 4th LANE 2004*, August 2004, Erlangen, Germany, p. 991-1002.
- 3.3 Malmberg, H., Laakso, P., Hovikorpi, J., Kujanpää, V., Laser cutting of pigment coated board, *Proceedings of NOLAMP 2005*, August 2005, Luleå, Sweden, pp.303-314.
- 3.4 Hovikorpi, J., Malmberg, H., Laakso, P., Kujanpää, V., Salminen, A., Miikki, N., Laser cutting of pulps, *22nd International Congress On Applications of Lasers & Electro-Optics ICALEO 2003*, October 13-16, 2003, Jacksonville, Florida, USA, 10 p.
- 3.5 Malmberg, H., Laakso, P., Hovikorpi, J., Kujanpää, V., Miikki, N., Kurittu, M., Laser cutting of pigment coated board, *Proceedings of the 23rd International Congress on Applications of Lasers and Electro-Optics ICALEO 2004*, October 4-7, 2004, San Francisco, USA, pp. 63-72.
- 3.6 Hovikorpi, J., Malmberg, H., Laakso, P., Kujanpää, V., Miikki, N., Kurittu, M., Laser cutting of paper, *Proceedings of the 23rd International Congress on Applications of Lasers and Electro-Optics ICALEO 2004*, October 4-7, 2004, San Francisco, USA, 11 p.
- 3.7 Malmberg, H., Qiu, F., Kujanpää, V., Laser cutting of particleboards and high- and medium-density fibreboards, *Proceedings of LAMP2006*, May 2006, Kyoto, Japan, 6 p.

- 3.8 Malmberg, H., Qiu, F., Kujanpää, V., Laser Cutting of Particleboards and High- and Medium-Density Fibreboards, International Institute of Welding Annual Assembly, Quebec, Canada, Aug. 28.-Sept.1, 2006, IIW IE-414-06.
- 3.9 Malmberg, H., Kujanpää, V., Salminen, A., Laser cutting of mineral pigment coated papers, Proceedings of ICALEO 2006, October 2006, Scottsdale, USA, pp. 255-264.
- 3.10 Malmberg, H., Immonen, M., Kujanpää, V., Laser cutting of paper, Proceedings of Challenges'06 Symposium, 8.-10.11.2006, Bratislava, Slovakia, 32 p.
- 3.11 Malmberg, H., Kujanpää, V., Laser cutting of superimposed layers of paper materials, Nolamp 2007, 20.-22.8.2007, Lappeenranta, Finland, 11 p.
- 3.12 Qiu, F., Malmberg, H., Kujanpää, V., Laser cutting of particleboards and high- and medium density fiberboards, Nolamp 2007, 20.-22.8.2007, Lappeenranta, Finland, pp. 398-407.
- 3.13 Malmberg, H., Laakso, P., Miikki, N., Kujanpää, V., Laser cutting of corrugated boards, Nolamp 2007, 20.-22.8.2007, Lappeenranta, Finland, 8 p.
- 3.14 Piili, H., Salminen, A., Lehtinen, J., Harkko, P., The Keyhole and Plasma Formation Studies of Fiber Laser-MIG/MAG Hybrid Welding. Proc. 27th Int. Conference on Applications of Lasers and Electro Optics ICALEO2008, Temecula, California, October 20-23, Laser Institute of America. Paper 1006, p.506-515. ISBN: 978-0-912035-12-3.
- 3.15 Salminen, A., Piili, H., The Effect of Parameters on Process Behavior and Efficiency in Fiber Laser Welding. Proc. IIW International Conference on Advances in Welding and Allied Technologies 16-17 July 2009 Singapore, International Institute of Welding, 6 pp.
- 3.16 Hirvimäki, M., Piili, H., Purtonen, T., Manninen, M., Salminen, A., Laser processing of glass. Proc. Glass Performance Days 11th International Conference on Architectural and Automotive Glass, Glaston Finland Oy, Tampere June 12-15.2009. p. 196-198.
- 3.17 Piili, H., Hirvimäki, M., Salminen, A., Lindell, H., Repeatability of laser cutting of uncoated and coated boards. Proc. 12th Nordic Laser Materials Processing Conference Nolamp12, Copenhagen, 24-26 August 2009. 30 pp.
- 3.18 Piili, H., Salminen, A., Martinkauppi, B., Hauta-Kasari, M., Kujanpää, V., Monitoring of laser cutting of paper materials. Proc. Int. WLT-Conference Lasers in Manufacturing LIM 2009, 15 – 18 June, 2009, Munich. Wissenschaftliche Gesellschaft Lasertechnik.
- 3.19 Purtonen, T., Piili, H., Taimisto, L., Laakso, P., Salminen, A., Computer Simulation on Quasi-Simultaneous Welding Process of Polycarbonate. Proc. 28th Int. Conf. on Lasers and Electro Optics ICALEO 09, Orlando, Florida, November 2-5, Laser Institute of America. P. 990-998.
- 3.20 Manninen, M., Piili, H., Salminen, A., An overview of the conventional microprocessing and laser assisted techniques for fabricating microscale features, ICALEO 2009, November 2-5, 2009, Orlando, USA, 10 p.
- 3.21 Piili, H., Salminen, A., Kujanpää, V., Interaction between Laser Beam and Paper Materials. Proc. 28th Int. Conf. on Applications of Lasers and Electro Optics ICALEO 09, Orlando, FL. USA November 2-5, Laser Institute of America. P. 1468-1477.
- 3.22 Rosowski, A., Piili, H., Pawlak, R., Kujanpää, V., Salminen, A., Spatial micro-processing of mono-crystalline silicon with hybrid chemical-laser etching method in KOH with the use of fiber laser (Paper M303), 28th Int. Conf. on Lasers and Electro-Optics (ICALEO 2009), Nov. 2.-5., 2009, Orlando, FL, U.S.A., Laser Institute of America, 2009, 2009, p. 950-958.

- 3.23 Hirvimäki, M., Kolehmainen, E., Piili, H., Salminen, A., Laser Assisted Manufacturing of Microscale Chemical Device of TT Reactor and Its Practical Application. Proc. 28th Int. Conf. on Applications of Lasers and Electro Optics ICALEO 09, Orlando, FL. USA November 2-5, Laser Institute of America. P. 1104-1113.
- 3.24 Hirvimäki, M., Piili, H., Jussila, A., Purtonen, T., Manninen, M., Uusi-Kyyny, P., Sundberg, A., Alopaeus, V., Salminen, A., Laser Welding of Micro-VLE-Measurement Device and its practical Application. Proc. 29th Int. Conf. on Applications of Lasers and Electro Optics ICALEO 10, Anaheim, CA, USA, September 26–30, Laser Institute of America. Paper M405. P. 856–863.
- 3.25 Manninen, M., Piili, H., Purtonen, T., Salminen, A., An Overview of Conventional Microprocessing and Laser based Techniques for Manufacturing Microscale Process Devices for Chemical Industry. Proc. 28th Int. Conf. on Lasers and Electro Optics ICALEO 09, Orlando, Florida, November 2-5, Laser Institute of America. pp.1458-1467.
- 3.26 Manninen, M., Sundberg, A., Piili, H., Salminen, A., Design of Microdistillation Column. Proc. 29th Int. Conf. on Applications of Lasers and Electro Optics ICALEO 10, Anaheim, CA, USA, September 26-30, Laser Institute of America. Paper M705. pp. 984-993.
- 3.27 Unt, A., Piili, H., Hirvimäki, M., Manninen, M., Salminen, A., Laser Scribing of Stainless Steel with and Without Work Media Proc. 29th Int. Conf. on Applications of Lasers and Electro Optics ICALEO 10, Anaheim, CA, USA, September 26-30, Laser Institute of America. Paper (M804). pp. 1012-1021.
- 3.28 Stepanov, A., Piili, H., Salminen, A., Characterization of Coloration Phenomena of Laser Cut Paper Material. Proc. 13th Nordic Laser Materials Processing Conference Nolamp13, Trondheim, 27-29 June 2011, Norwegian University of Science and Technology, ISBN 978-82-998664-1-5. pp. 155-166.
- 3.29 Piili, H., Taimisto, L., Purtonen, T., Ruotsalainen, S., Laakso, P., Salminen, A., Correlation between computer-based simulation model and practice of high-speed laser welding of polycarbonate. Proc. 29th Int. Conf. on Applications of Lasers and Electro Optics ICALEO 10, Anaheim, CA, USA, September 26-30, Laser Institute of America. Paper P141. pp. 1404-1412.
- 3.30 Taimisto, L., Lehti, A., Piili, H., Salminen, A., Kujanpää, V., Evaluation of Different Monitoring Methods of Laser Assisted Additive Manufacturing of Ceramic Material. Proc. 13th Nordic Laser Materials Processing Conference Nolamp13, Trondheim, 27-29 June 2011, Norwegian University of Science and Technology, ISBN 978-82-998664-1-5, pp. 143-154.
- 3.31 Stepanov, A., Piili, H., Salminen, A., Characterization of Coloration Phenomena of Laser Cut Paper Material. Proc. 13th Nordic Laser Materials Processing Conference Nolamp13, Trondheim, 27-29 June 2011, Norwegian University of Science and Technology, ISBN 978-82-998664-1-5. pp. 155-166.
- 3.32 Hirvimäki, M., Manninen, M., Unt, A., Piili, H., Salminen, A., Comparison of Laser Scribing of Stainless Steel between Pulsed Lasers and CW Lasers. Proc. 13th Nordic Laser Materials Processing Conference Nolamp13, Trondheim, 27-29 June 2011, Norwegian University of Science and Technology, ISBN 978-82-998664-1-5, pp. 329-340.

- 3.33 Hirvimäki, M., Manninen, M., Piili, H., Sundberg, A., Uusi-Kyyny, P., Alopaeus, V., Salminen, A., Possibilities of laser technology in the manufacture of small scale devices for chemical industry, *Camure 8 & ISMR 7*, 22.-25.5.2011, Naantali, 2011, p. 1, art nro. P-68.
- 3.34 Lehti, A., Taimisto, L., Piili, H., Salminen, A., Nyrhilä, O., Evaluation of Different Monitoring Methods of Laser Assisted Additive Manufacturing of Stainless Steel, *ECerS XII*, June 19-23, 2011, Stockholm, Sweden, 4 p.
- 3.35 Stepanov, A., Piili, H., Saukkonen, E., Salminen, A., Effect of Linear Cutting Energy on Coloration of Paper in Laser Cutting of Paper Material. *Proc. 30th Int. Conf. on Applications of Lasers and Electro Optics ICALEO11*, Orlando, FL, USA, October 23-27, Laser Institute of America. pp.71-79.
- 3.36 Taimisto, L., Lehti, A., Piili, H., Qian, B., Nyrhilä, O., Shen, Z., Salminen, A., Effect Of Process Parameters To Monitoring Of Laser Assisted Additive Manufacturing Of Alumina Ceramics. *Proc. 30th Int. Conf. on Applications of Lasers and Electro Optics ICALEO11*, Orlando, FL, USA, October 23-27, Laser Institute of America. pp.187-195.
- 3.37 Taimisto, L., Lehti, A., Piili, H., Nyrhilä, O., Salminen, A., Correlation between Pyrometer Monitoring and Active Illumination Imaging of Laser Assisted Additive Manufacturing of Stainless Steel. *Proc. 30th Int. Conf. on Applications of Lasers and Electro Optics ICALEO11*, Orlando, FL, USA, October 23-27, Laser Institute of America. pp. 196-204.
- 3.38 Piili, H., Widmaier, T., Happonen, A., Juhanko, J., Salminen, A., Kuosmanen, P. and Nyrhilä, O., Digital design process and additive manufacturing of a configurable product. *Proc. Int. Conf. AMSE2012*. Thailand, September 27-28, 2012. Singapore Society of Mechanical Engineers (SSME).
- 3.39 Widmaier, T., Kontio, J., Juhanko, J., Piili, H., Kuosmanen, P., Salminen, A., Collaborative Design Process of a Configurable Product, *8th International DAAAM Baltic Conference Industrial Engineering - 19-21 April 2012*, Tallinn, Estonia. 7 pp.
- 3.40 Piili, H., Hirvimäki, M., Manninen, M., Matilainen, V., Salminen, A. and Nyrhilä, O., Manufacturing of Micro Scale Components with Laser Additive Manufacturing of Stainless Steel. *The 8th International Workshop on Micro Factories IWMF 2012*, Tampere University of Technology, 18-20 June, Tampere, Finland
- 3.41 Islam, M.E., Taimisto, L., Lehti, A., Piili, H., Nyrhilä, O., Salminen, A., Evaluation of effect of heat input in laser assisted additive manufacturing of stainless steel, *Proc. 37th International Conference Matador*. 25th – 27th July, 2012. Manchester, U.K.,The University of Manchester, pp. 361-364.
- 3.42 Islam, M.E., Taimisto, L., Piili, H., Nyrhilä, O., Salminen, A., Comparison of theoretical and practical studies of heat input in laser assisted additive manufacturing of stainless steel. *Proc. 37th International Conference Matador*. 25th – 27th July, 2012. Manchester, U.K.,The University of Manchester, pp. 365-368.
- 3.43 Piili, H., Widmaier, T., Happonen, A., Juhanko, J., Salminen, A., Kuosmanen, P., Nyrhilä, O., Digital design process and additive manufacturing of a configurable product. *Proc. Int. Conf. AMSE2012*. Thailand, September 27-28, 2012. Singapore Society of Mechanical Engineers (SSME).

- 3.44 Stepanov, A., Piili, H. and Salminen, A., Comparison of Monitoring Methods For Laser Beam and Paper Material Interaction Proc. Int. Conf. BTLA2012. St Petersburg State Technical University. 17-21.9.2012. Pushkin, Russia. 14 p.
- 3.45 Matilainen, V., Piili, H., Salminen, A. and Nyrhilä, O., Benchmark study of laser additive manufacturing of stainless steel. Proc. Int. Conf. BTLA2012. St Petersburg State Technical University. 17-21.9.2012. Pushkin, Russia.
- 3.46 Islam, M., Purtonen, T., Piili, H., Salminen, A., Nyrhilä, O., Temperature Profile and Imaging Analysis of Laser Additive Manufacturing of Stainless Steel. Lasers in Manufacturing Conference LIM 2013. Munich Germany 2013
- 3.47 Matilainen, V., Väistö, T., Piili, H., Salminen, A., Nyrhilä, O., Techno-economical benchmark study of laser additive manufacturing of stainless steel. Proc. of the 14th Nordic Laser Materials Processing Conference NOLAMP 14, August 26th – 28th 2013, Gothenburg, Sweden. Technical University of Lulea. Pages 79-90
- 3.48 Väer, K., Matilainen, V., Piili, H., Salminen, A., Mäkelä, I., Nyrhilä, O., Preliminary investigation of different shapes of support structures in laser additive manufacturing of stainless steel, Nolamp 14, August 26-28, 2013, Gothenburg. Sweden, 11 p.
- 3.49 Piili, H., Matilainen, V., Hirvimäki, M., Manninen, M., Purtonen, T., Salminen, A., Nyrhilä, O., Manufacturing of micro scale stainless steel components with laser additive manufacturing, MME2013, September 1-4, 2013, Espoo. Finland, 4 p.
- 3.50 Matilainen, V., Piili, H., Salminen, A., Syvänen, T., Nyrhilä, O., Characterization of process efficiency improvement in laser additive manufacturing, LANE2014, 8th Inetrnation Conference On Photonic Technologies, September, 8-11, 2014, Fürth, Germany, 11 p.
- 3.51 Järvinen, P., Matilainen, V., Li, X., Piili, H., Salminen, A., Mäkelä, I., Nyrhilä, O., Characterization of effect of support structures in laser additive manufacturing of stainless steel, LANE2014, 8th Inetrnation Conference On Photonic Technologies, September, 8-11, 2014, Fürth, Germany, 10 p.
- 3.52 Scotti, G., Kanninen, P., Matilainen, V-P., Piili, H., Salminen, A., Kallio, T. and Franssila, S., Rapid Prototyping of Stainless Steel Micro Fuel Cells. Proceedings of 25th international conferere on Micromechanics and Microsystems Europe MME2014, August 31- September 3, Istanbul, Turkey. 4 pages.
- 3.53 Matilainen, V., Piili, H., Salminen, A., Preliminary characterization of phenomena occurring during single track fabrication in laser additive manufacturing of stainless steel. Proc. of 33rd Int. Conference On Applications of Lasers and Electro Optics ICALEO14, San Diego, CA, USA, October 19-23, 2014, Laser Institute of America.
- 3.54 Venkataramanan, V., Piili, H., Matilainen, V-P., Salminen, A., Mass customization of sunglass frame utilizing metallic laser additive manufacturing. 9th International Conference on Photonic Technologies LANE 2016. Bayerisches Laserzentrum GmbH and Institute of Photonic Technologies, Friedrich-Alexander-Universität Erlangen-Nürnberg Fürth. Germany, September 19-22. 2016.
- 3.55 Hovilehto, M., Jokinen, L., Holopainen, P., Salminen, A., Piili H., Design of hydraulic component for additive manufacturing of stainless steel, 9th International Conference on Photonic Technologies LANE 2016. Bayerisches Laserzentrum GmbH and Institute of

- Photonic Technologies, Friedrich-Alexander-Universität Erlangen-Nürnberg Fürth. Germany, September 19-22. 2016.
- 3.56 Lösser, A., Minet-Lallemant, K., Piili, H., Ylander, P., Kotila, J., Utilization of a Photodiode-based Monitoring System for Quality Assurance and Process Optimization in AM, AMPM 2017 – Additive Manufacturing with Powder Metallurgy Conference, Las Vegas, USA, June 13-15. 2017. 13 p.
 - 3.57 Kivirasi, E., Piili, H., Kotila, J., Minet, K., A Approach For A Better Understanding Of Spattering Phenomena: Spatter Analysis System Development For Direct Metal Laser Sintering, EuroPM2018 Conference, Bilbao, Spain, October 14-18, 2018. 6 p.
 - 3.58 Piili, H., Kivirasi, E., Ylander, P., Kotila, J., Preliminary study of spattering phenomena and its fundamentals in powder bed fusion of metallic materials, EuroPM2018 Conference, Bilbao, Spain, October 14-18, 2018. 6 p.
 - 3.59 Gopaluni, A., Piili, H., Salminen, A. (2022) Review of Micro and Mesoscale simulation methods for Laser Powder Bed Fusion, Volume Special Technology Sessions on Aeronautics and Manufacturing, International Center for Numerical Methods in Engineering CIMNE, in: eccomas2022. URL https://www.scipedia.com/public/Nyamekye_et_al_2022a, DOI: 10.23967/eccomas.2022.261.
 - 3.60 Nyamekye, P., Lakshmanan R., Piili, H. (2022) Strategic application of digital tools to enhance lifecycle cost: product design and optimization in metal based powder bed fusion, Volume Special Technology Sessions on Aeronautics and Manufacturing, International Center for Numerical Methods in Engineering CIMNE, in: eccomas2022. URL https://www.scipedia.com/public/Nyamekye_et_al_2022a, DOI: 10.23967/eccomas.2022.261.
 - 3.61 Piili, H., Lindqvist, M., Kivirasi, E., Parchegani, S., Salminen, A. (2022) Laser welding of AM parts as solution to provide new innovations for separation industry, Conference: 8th European Congress on Computational Methods in Applied Sciences and Engineering, 5 - 9 June, 2022 Oslo, Norway, 1 p., available: <https://eccomas2022.org/admin/files/fileabstract/A2315.pdf>.

D. Publications intended for professional communities

D1. Article in a trade journal

- 1.1 Leino, K., Malmberg, H., Paperin ja kartongin laserleikkaus, LLPC News, No. 2/2006, Finland, 3 p.
- 1.2 Malmberg, H., Kujanpää, V., Laser Cutting of Paper Materials, Industrial Laser Solution, No. 6/2006, USA, 4 p.
- 1.3 Malmberg, H., Kujanpää V, Paperimateriaalien laserleikkaus, Vol. 88, Paperi ja Puu, No. 8/2006, Finland, pp. 452-454.
- 1.4 Malmberg, H., Kujanpää V, Paperimateriaalien laserleikkaus on tulevaisuutta, Pakkaus, No. 11/2006, Finland, 3 p.
- 1.5 Salminen, A., Jussila, A., Manninen, M., Pekkarinen, J., Pihlava, A., Piili, H., Piironen, A., Purtonen, T., Lasertyöstö astuu mikromaailmaan, 10/2009, Tekniikka&Talous.

- 1.6 Salminen, A., Piili, H., Kiinnostavia mahdollisuuksia teknologia-alan yrityksille, 2/2011, Technopolis News.
- 1.7 Salminen, A., Piili, H., Vieraskynä: Suomi on jäämässä jälkeen 3D-tulostuksen kehityksessä, 12.4.2013, Helsingin Sanomat.
- 1.8 Matilainen, V., Pekkarinen, J., Laitinen, V., Piili, H., Salminen, A., 3D-tulostettujen metalliosien hitsaus. Hitsaustekniikka Vol. 66. 2015, No 1., s. 8-13.
- 1.9 Salminen, A. ja Piili, H., Lisäävän valmistuksen eli ns. 3D-tulostuksen opetuksesta ja koulutuksesta. Hitsaustekniikka Vol. 66. 2015, No 1., s. 21-24.
- 1.10 Salminen A., Piili, H., Purtonen, T., 3D tulostuksen eli lisäävän valmistustekniikan mahdollisuudet suomalaiselle valmistavalle teollisuudelle, Hitsaustekniikka-lehti, 5/2016.
- 1.11 Piili, H., Matilainen, V., Salminen A., Lisäävän valmistuksen eli 3D-tulostuksen opetuksen ja koulutuksen haasteet ja mahdollisuudet. Ohutlevy 1/2016. pp. 43-46. www.ohutlevy.com.
- 1.12 Korpela, M., Heiskanen, A., Riikonen, N., Piili, H., ja Salminen, A., Metallien 3D-tulostuksen tilanne Suomessa globaalisti hämmästyttävää vauhtia. Hitsaustekniikkalehti Vol 71. No. 5 (2019) s.4-5.
- 1.13 Riikonen, N., Heiskanen, A., Piili, H., Salminen, A. Metallien 3D-tulostuksen käyttö kasvaa maailmalla. Hitsaustekniikka-lehti Vol. 71 No. 6 (2019).
- 1.14 Heiskanen, A., Riikonen, N., Piili, H. Lisäävä valmistus muuttaa suunnittelua. Konepajamessut kolumni 18.2.2020. Tampere.
- 1.15 Salminen, A., Piili, H. ja Pekkarinen, J., Suurten kappaleiden 3D-tulostus. Suomen hitsaustekniillinen yhdistys Ry Laserfoorumin aamiaisseminaari. Tampere 29.11.2022. Suomen CAD/CAM yhdistys Ry. 44 sivua.

D4. Published development or research report or study

- 4.1 Editors: Malmberg, H., Leino, K., Kujanpää, V., Laser Cutting of Paper and Board (ILACPaper), Research Report 68, Department of Mechanical Engineering, Lappeenranta University of Technology, Finland, 2006, 344 p.
- 4.2 Editors: Hirvimäki, M., Manninen, M., Piili, H., Salminen, A. New fabrication technologies for microprocess devices, Research Report 83, Faculty of Technology, Department of Mechanical Engineering, Lappeenranta University of Technology, Finland, 2012, 98 p.
- 4.3 Editors: Piili, H., Lehti, A., Taimisto, L., Salminen, A. Integrated Functionality through Novel Manufacturing and Materials, Research Report 10, Faculty of Technology, Department of Mechanical Engineering, Lappeenranta University of Technology, Finland, 2013, 84 p.
- 4.4 Editors: Stepanov, A., Piili, H., Purtonen, T., Salminen, A., Innovative Cutting and Marking Solutions, Research Report 11, Faculty of Technology, Department of Mechanical Engineering, Lappeenranta University of Technology, Finland, 2013, 59 p.
- 4.5 Editors: Piili, H., Hirvimäki, M., Väistö, T., Nyamekye, P., Pekkarinen, J., Salminen, A., Katsaus lisäävän valmistuksen (aka 3D-tulostus) mahdollisuuksiin ja kustannuksiin metallisten tuotteiden valmistuksessa: Case jauhepetiteknikka (Overview of the possibilities and costs of additive manufacturing (aka 3D printing) in the manufacture of metal products: Case: Powder bed fusion), Research Report 40, Faculty of Technology, Department of

- Mechanical Engineering, Lappeenranta University of Technology, Finland, 2014, 31 p., available: <https://lutpub.lut.fi/handle/10024/102281>.
- 4.6 Editor: Piili, H., Näkökulmia 3D-tulostuksen opetukseen ja koulutukseen (Näkökulmia 3D-tulostuksen opetukseen ja koulutukseen (Perspectives on 3D printing education and training), LUT Scientific and Expertise Publications, Lappeenranta University of Technology, Finland, 2015, 46 p., ISBN:978-952-265-857-9, available: <https://lutpub.lut.fi/handle/10024/116094>,
- 4.7 Editors: Piili, H., Salminen A., Näin opetan lisäävää valmistusta ja 3D-tulostusta: Pohdintoja uuden teknologian opetuksesta ja koulutuksesta (How to teach additive manufacturing and 3D printing: Reflections on the teaching and training of new technologies), LUT Scientific and Expertise Publications, Lappeenranta University of Technology, Finland, 2016, 20 p., available: <https://lutpub.lut.fi/bitstream/handle/10024/120218/160207%20N%C3%A4in%20opetan%20ja%20koulutan%203D-tulostusta%20FV.pdf>
- 4.8 Editors: Hirvimäki, M., Manninen, M., Piili, H., Salminen, A., Lasertekniikan kehittäminen taiteilijayhteistyön kautta, Lares-projektin loppuraportti (Development of laser technology through artist collaboration, final report of the Lares project), LUT Scientific and Expertise Publications, Lappeenranta University of Technology, Finland, 2016, 32 p., available: <https://lutpub.lut.fi/handle/10024/124115>.
- 4.9 Editors: Piili, H., Heiskanen, E., Koponen, M., Karppinen, H., Salminen, A., Digipedagogiikka: Lasten ja nuorten digitalisaatiokasvatus (Digital pedagogy: Digitalisation education for children and young people), LUT Scientific and Expertise Publications, LUT University, Finland, 2019, 34 p., available: <https://lutpub.lut.fi/handle/10024/159632>.
- 4.10 Editors: Piili, H., Salminen, A., Korpela, M., Riikonen, N., Heiskanen, A., Kohtanen, K., Westman, S., Katsaus metallien 3D-tulostukseen: Tutkimuksen lähtökohdat (Overview of 3D printing of metals: Starting points for research), LUT Scientific and Expertise Publications, LUT University, Finland, 2019, 32 p., available: <https://lutpub.lut.fi/handle/10024/159875>.
- 4.11 Editors: Piili, H., Salminen, A., Korpela, M., Kurvinen, A., Pikkarainen, A., Riikonen, N., Heiskanen, A., Westman, S. Lähtökohdat 3D-tulostuksen opetukseen ja koulutukseen (Starting points for teaching and training in 3D printing), LUT Scientific and Expertise Publications, LUT University, Finland, 2019, 23 p., available: <https://lutpub.lut.fi/handle/10024/159972>.
- 4.12 Editors: Hirvimäki, M., Jokela, J., Piili, H. (2020) Jaettu asiantuntijuus yliopisto-opetuksessa (Shared expertise in university education), LUT Scientific and Expertise Publications Raportit ja selvitykset – Reports 103, LUT University, pp. 1-24., available: <https://lutpub.lut.fi/handle/10024/161908>.
- 4.13 Editos: Afkhami, S., Amraei, M., Unt, A., Piili, H., Björk, T. 2021. Metal additive manufacturing for industrial applications. LUT Scientific and Expertise Publications Raportit ja selvitykset – Reports 107, LUT University, pp. 1-41, available: <https://lutpub.lut.fi/bitstream/handle/10024/162485/260412%20Metal%20additive%20manufacturing%20for%20industrial%20applications.pdf?sequence=1>.

G. Theses**G2. Master's thesis, polytechnic Master's thesis**

- 2.1 Malmberg, H., Characterisation of laser cutting of consumer boards, Master of Science Thesis, Lappeenranta University of Technology, 2003, 181 p.

G3. Licentiate thesis

- 3.1 Piili, H., Characterisation of interaction phenomena of laser beam and paper materials in cutting, Licentiate Thesis, Lappeenranta University of Technology, 2009, 258 p.

G4. Doctoral dissertation (monograph)

- 4.1 Piili, H., Characterisation of laser beam and paper material interaction, Doctoral Thesis, Lappeenranta University of Technology, 2013, 265 p. ISBN 978-952-265-381-9

G5. Doctoral dissertation (article)

- 5.1 Piili, H. (2023) 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. Doctoral Thesis, Lappeenranta University of Technology, 2023, 218 p. ISBN 978-952-412-019-7, ISBN 978-952-412-020-3 (PDF).