

Publication list Ch. Taudt

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Books and book chapters

- **Taudt, Ch.**, "Development and Characterization of a Dispersion-Encoded Method for Low-Coherence Interferometry", *Springer Vieweg*, Wiesbaden (2021), doi: [10.1007/978-3-658-35926-3](https://doi.org/10.1007/978-3-658-35926-3).
- **Taudt, Ch.**; Baselt, T.; Kabardiadi-Virkovski, A., "Smart optical inline metrology" in Pressel, K. and van Driel, W. (Eds.), "Recent advances in the reliability assessment of electronic devices", *Springer Vieweg*, Wiesbaden (2024), doi: [10.1007/978-3-031-59361-1_3](https://doi.org/10.1007/978-3-031-59361-1_3).

Peer-reviewed journals

- **Taudt, Ch.**; Molotnikov, A.; M. Brandt, "Multispectral, Computational Enhanced, In-line-ready Surface Profilometry for AM", *Procedia CIRP* 143C, pp. 234-239, (2026, in print)
- T. Dempfle, L. Kläber, M. Rieger, S. Strauß, A. Kabardiadi-Virkovski, **Ch. Taudt**, "Inline-Messtechnik für kontinuierliche Prozesse/Inline measurement technology for continuous processes - Inline technology for continuous production processes using pultrusion as an example", *wt Werkstattstechnik online*, 115(03), pp. 178-184 (January 2025), doi: [10.37544/1436-4980-2025-03-60](https://doi.org/10.37544/1436-4980-2025-03-60).
- **Taudt, Ch.**; Nelsen, B.; Baselt, T.; Koch, E.; Hartmann, P., "High-dynamic-range areal profilometry using an imaging, dispersion-encoded low-coherence interferometer", *Opt. Express* 28, 17320-17333 (2020), doi: [10.1364/OE.389839](https://doi.org/10.1364/OE.389839).
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Conference proceedings (selection)

- **Taudt, Ch.**; Molotnikov, A.; Brandt, M.: "Optical in-line metrology for AM – Strategies for performance enhancements using multi-spectral and compressive

sensing approaches”, *Proc. Materials Science and Engineering Congress (MSE)*, (2026, in print)

- **Taudt, Ch.**; Molotnikov, A.; Brandt, M.:”Towards an abstract description model for optical inline metrology in manufacturing to facilitate analysis by means of generative AI”, *Proc. SPIE 13884*, Laser 3D Manufacturing XIII, 1388403 (5 March 2026); doi: [10.1117/12.3081670](https://doi.org/10.1117/12.3081670)
- Kläber, L.; Bischoff, J.; Kabardiadi-Virkovski, A.; Schmiedel, K.; **Taudt, Ch.**; Baselt, T.; Schmidt, Ch.; Keller, N.; Lasagni, A.F. and Hartmann, P.; ”Inline surface analysis through combined evaluation of scattering and geometric properties: exemplary possibilities for integration in bipolar plate production”, *Proc. SPIE 13567*, Optical Measurement Systems for Industrial Inspection XIV, 135671J (8 August 2025);doi: [10.1117/12.3062567](https://doi.org/10.1117/12.3062567)
- **Taudt, Ch.**; Leyens, Ch., Hartmann, P. and Molotnikov, A., ”Darkfield-scattering surface analysis in powder-based AM-processes: analysis of a multiwavelength approach”, *Proc. SPIE 13354*, Laser 3D Manufacturing XII,1335403 (2025), doi: [10.1117/12.3043198](https://doi.org/10.1117/12.3043198).
- **Taudt, Ch.**; Gruner, S. and Hartmann, P., ”Investigation of Reconstruction Stability and Limitations for Combined Dithering-Compressed-Sensing Processing of Spectral Imaging Interferometric Data in White-Light Interferometric Surface Profiling”, *Proc. SPIE 12428*, Photonic Instrumentation Engineering X, PC124280A (2023), doi: [10.1117/12.2649589](https://doi.org/10.1117/12.2649589).
- Kabardiadi-Virkovski, A.; **Taudt, Ch.**; Hartmann, P., ”AI-based Analysis of Extremely Low-Resolved Spectrogram Fingerprints for the Calculation of Surface Profiles in Low-Coherence Interferometry”, *Proc. SPIE 12438*, AI and Optical Data Sciences IV, 124380S (2023), doi: [10.1117/12.2650209](https://doi.org/10.1117/12.2650209).
- Baselt, T.; **Taudt, Ch.**; Ruf, D. and Peter Hartmann ”Spectrally resolved temporal coherence of spectrally narrowband filtered high-power supercontinuum light source versus an appropriately treated laser-driven plasma light source”, *Proc. SPIE 12417*, Optical Components and Materials XX, 1241716 (14 March 2023);doi: [10.1117/12.2650033](https://doi.org/10.1117/12.2650033).
- **Taudt, Ch.**; and Hartmann, P., ”Method for simple phase recovery and denoising in spectral imaging interferometry based on error-diffusion dithering” in Imaging and Applied Optics Congress 2022 (3D, AOA, COSI, ISA, pcAOP), Technical Digest Series (Optica Publishing Group, 2022), [link](#).
- **Taudt, Ch.**; and Hartmann, P., ”Comparative characterization of dithering schemes for denoising and performance improvement in spectral imaging interferometry” in OSA Optical Sensors and Sensing Congress 2021 (AIS, FTS, HISE, SENSORS, ES), S. Buckley, F. Vanier, S. Shi, K. Walker, I. Coddington, S. Paine, K. Lok Chan, W. Moses, S. Qian, P. Pellegrino, F. Vollmer, G. , J. Jágorská, R. Menzies,

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- Baselt, T.; **Taudt, Ch.**; Nelsen, B.; Lasagni, A.F.; Hartmann, P., "Supermode supercontinuum generation in the cladding of a photonic crystal fiber", *Proc. SPIE 11264*, Nonlinear Frequency Generation and Conversion: Materials and Devices XIX, 112641Z (2 March 2020); doi: [10.1117/12.2545633](https://doi.org/10.1117/12.2545633).

Patents

- Hartmann, P.; **Taudt, Ch.**; Baselt, T., Optische Anordnung zur Bestimmung von Lageänderungen, Positionen, Verformung, Bewegungen, Beschleunigungen und Geschwindigkeiten, *DE 10 2013 019 774 B4*, 2019.
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