

Christopher Taudt
Dr.-Ing.

Römerplatz 8
DE-08056 Zwickau
☎ +49 162 931 0 131
✉ christopher.taudt@iws.fraunhofer.de



Personal Information

Date of birth	12th March 1987
Place of birth	Erfurt/Germany
Nationality	German

Short Summary

Experienced scientist and engineer with a strong background in optical metrology, data analysis and applied research for manufacturing processes. Passionate collaborator, empathetic supervisor with leadership experience and engaged reviewer. Very structured and systematic approach to project conception, team leadership and project management especially in interdisciplinary contexts. Loves to translate knowledge into application!

Work Experience

05/2025 – 04/2027	<p>Visiting Professor, RMIT University Melbourne/Australia, Group: <i>Center for Additive Manufacturing</i>, DFG Walter-Benjamin-Fellowship with Prof. A. Molotnikov.</p> <p>Topics:</p> <ul style="list-style-type: none">• Development of computational imaging approaches for surface metrology (compressive sampling, sensor fusion, etc.)• Development of interferometric and scattering in-line metrology for additive manufacturing processes• Development of advanced, deterministic and statistical/AI-based data analysis and correlation approaches
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- 01/2023 – 04/2025
(part-time since 01/2021) **Group leader, Fraunhofer Application Center for Optical Metrology and Surface Technologies AZOM, Group: Surface Metrology.**
Topics:
- Strategic planning of research topics and resources
 - Leadership / group management of 7 qualified researchers and supervision of 5 students (Master and Bachelor level)
 - Acquisition and administration of national/international industrial and research projects (scientific, financial and collaboration)
- 01/2021 – 07/2024 **Post-Doc, Leupold-Institute for Applied Natural Sciences / University of Applied Sciences Zwickau.**
Topics:
- Development of novel deterministic and statistical data analysis approaches
 - Research in noise reduction and resolution enhancement technologies (computational imaging)
 - Development of defect detection and classification technologies (image processing+ AI)
 - Scientific publication and review for journals
 - Administration of national/international research projects
- 07/2015 – 12/2020 **Graduate research scientist, Fraunhofer Application Center for Optical Metrology and Surface Technologies AZOM.**
Topics: development of measurement systems and data analysis approaches (mainly interferometry) for surface control, roughness, critical dimensions, polymer and thin-film characterization
- 01/2012 – 12/2020 **Graduate research scientist, Leupold-Institute for Applied Natural Sciences/ University of Applied Sciences Zwickau.**
Topics: development of optical metrology approaches for defect detection, image processing and distance monitoring
- 09/2012 – 12/2014 **Freelance software engineer, Industry.**
Topic: programming and automation of ballistic material test benches
- 03/2011 – 12/2011 **Junior researcher, Institute for Production Technologies / University of Applied Sciences Zwickau.**
topics: research projects in material testing and development

Education

- 05/2013 – 11/2020 **Ph.D., Technical University of Dresden / Germany; Optical Metrology, degree: Dr.-Ing., grade: magna cum laude.**
Topic: *Development and Characterization of a Dispersion-Encoded Method for Low-Coherence Interferometry*

09/2005 – 02/2011 **Undergraduate studies**, *University of Applied Sciences Zwickau (UAS) / Germany; Mechanical Engineering*, degree: Diplom-Ingenieur (FH), grade: 1.0.
Topic: *Determination of mechanical and optical properties of highly transparent epoxy resins*, Honoured with the ME-Course-Award 2010

International Experience

05/2025 – 04/2027 **Post-doc position**, *RMIT University Melbourne/Australia*, host: Prof. Andrey Molotnikov, funding: DFG Walter-Benjamin-Fellowship.
Topic: *Development of sparse, high-dynamic and information-rich approaches in optical surface metrology for next-generation, industrial additive manufacturing (NXTos-AM)*

01/2014 – 02/2014 **Scientific residency**, *Swanson School of Engineering / University of Pittsburgh (USA)*, supervisor: Prof. Kevin P. Chen.
Topic: *development of data processing approaches for fiber sensors*

01/2013 – 02/2013 **Scientific residency**, *Swanson School of Engineering / University of Pittsburgh (USA)*, supervisor: Prof. Kevin P. Chen.
Topic: *execution and analysis of experiments using optical fiber metrology approaches*

09/2007 – 05/2008 **Undergraduate studies**, *Institute of Technology Sligo/Ireland; Mechanical Engineering*, degree: Bachelor of Engineering, grade: with distinction.

Scientific Engagement

05/2025 - current **Guest Editor**, *Focus Issue "Advanced Manufacturing and Metrology"*, editing in Journal "JPhys Photonics" (IOP) for papers at the intersection between optical metrology, laser-based manufacturing and process control, [website link](#).

08/2022 - current **Board of Reviewers**, *Journal "Metrology" (MDPI)*, board member for regular review of metrology-related research papers, [website link](#).

07/2023 - current **Review Editor**, *Journal "Advanced Optical Technologies" (Frontiers)*, board member for regular review of research in the section "Optical Coatings and Metrology", [website link](#).

09/2022 - 02/2025 **Guest Editor**, *Special Issue "Next Level Surface Metrology - Towards Photonic Metrology and Surface Processing"*, editing in Journal "Metrology" (MDPI) for papers at the intersection between optical metrology, laser-based manufacturing and process control, [website link](#).

01/2021 - current	Member, OSA/Optica , Membership in one of the largest scientific/engineering communities.
01/2024 - current	Member, SPIE , Membership in one of the largest scientific/engineering communities.
01/2021 - current	Reviewer , <i>for various Journals</i> , performing reviews in e.g. image processing, interferometry, optical metrology for journals such as <i>Optics Express</i> , <i>Applied Optics</i> , <i>Sensors</i> , <i>Applied Sciences</i> and <i>Polymers</i> .
01/2021 - current	Public outreach , <i>interest in scientific writing and communication like</i> . <ul style="list-style-type: none"> • article in popular german weblog about my thesis • participation as a pen pal for a 7th grade pupil in Letters to a Pre-Scientist program 2023-2024 and 2024-2025

Administrative and Management Experience

04/2021 - 06/2022	Member of LAMS , <i>Council of research personnel on state level (Saxony); Delegate for the University of Applied Sciences Zwickau.</i>
05/2020 - 10/2023	Task Lead , <i>EU-project "iRel4.0"</i> , Conception, acquisition, management and research work of tasks for UAS Zwickau and Fraunhofer (1.6 Mio. €) within the project consortium (80 partners, 100 Mio. €), project website . topic: combination of laser surface manipulation and interferometric metrology for process control in semiconductor manufacturing
04/2017 - 12/2020	Task Lead , <i>National-project "EFFSIL300"</i> , Planning, acquisition, management and research work of tasks for UAS Zwickau and Fraunhofer (1.3 Mio. €) within the project consortium (6 partners, 10 Mio. €), project website . Topic: holographic lithography in semiconductor processes
07/2016 - 04/2025	Laser safety officer , <i>Administration, planning and education of all laser safety aspects in AZOM</i> , TÜV-certified.
08/2015 - 12/2020	Management support , <i>Fraunhofer Application Center for Optical Metrology and Surface Technologies AZOM</i> , co-founding and development of the joint research center between Fraunhofer IWS Dresden and the University of Applied Sciences Zwickau under the administration of Prof. Peter Hartmann (2.5 Mio. €), center website . tasks: lab development, acquisition, implementation and maintenance of equipment, support in recruiting, acquisition of industrial contacts, general administration

- 02/2015 - 11/2023 **Member of the extended senate**, *University of Applied Sciences Zwickau*, democratic self-organization of the university; representative of research personnel.
- 04/2014 - 03/2017 **Task Lead**, *EU-project "eRamp"*, Acquisition, management and research work of task for UAS Zwickau (400T€) within the project consortium (25 partners, 55 Mio. €), [project website](#).
topic: process-accompanying surface height control in semiconductor manufacturing

Grants

- 03/2024 **Marie Skłodowska-Curie Actions Global Postdoctoral Fellowship (NXTos-AM, Nr.: 101151335)**, *RMIT University, Melbourne, Australia*, Call HORIZON-MSCA-2023-PF-01(39 PM, 285.700 €).
 - Evaluation result 90%; not funded due to budgetary constraints; Seal of Excellence expected
 - Development of novel approaches in optical surface metrology for additive manufacturing
- 09/2007 – 05/2008 **Erasmus fellowship**, *Institute of Technology Sligo, Sligo, Ireland*, 3.000 €.
 - new knowledge in design and automation of mechanical systems, extended language and intercultural competencies

Programming Skills

Python	very experienced	<i>development and implementation of analysis algorithms, AI-approaches, image processing tools in scientific and industrial contexts; used in all projects</i>
Matlab	very experienced	<i>implementation of data processing and analysis algorithms mainly in scientific contexts</i>
C	experienced	<i>hardware specific development of routines in industrial contexts (test benches, sensor systems, on-chip data processing)</i>
LabView	experienced	<i>automation of test benches and systems in scientific and industrial contexts</i>

Language Skills

German	fluent	<i>mother tongue</i>
English	business fluent	<i>C2 equivalent</i>
French	Elementary	<i>A2 equivalent</i>
Spanish	Beginner	<i>A1 equivalent</i>

Hobbies and Social Activities

12/2021 - current	Musician , artist name: harte echtzeit . performing algorithmic/live coded music utilizing scientific data (e.g. gravitational wave events)
06/2019 - 09/2024	Deputy Chair , <i>Art Association</i> , Freunde aktueller Kunst e.V.. Topics: art curation and presentation
05/2015 - 02/2021	Founder and President , <i>Hackerspace</i> , z-Labor e.V. Topics: technology education, public outreach, digital tools and programming courses as well as demonstration for youths and adults
Sports	biking, running, hiking
Culture	organization of events, concerts, readings, community events, etc.

Information and Contact

Reserach Gate	https://www.researchgate.net/profile/Christopher-Taudt
LinkedIn	https://de.linkedin.com/in/christopher-taudt-86a244126
Scopus	https://www.scopus.com/authid/detail.uri?authorId=55745091300
OrcID	https://orcid.org/0000-0003-1877-4373
Publons/Web of Science	https://www.webofscience.com/wos/author/record/2511100
Fraunhofer	christopher.taudt@iws.fraunhofer.de
University of Applied Sciences Zwickau	christopher.taudt@fh-zwickau.de