Curriculum vitae

Personal Details:

Name:	Anna Rosa Ziefuss
Date of birth:	02.02.1987 in Germany
Birthplace:	Mülheim an der Ruhr
Orchid ID:	https://orcid.org/0000-0002-9465-1917

Professional Scientific Activities:

Since 01/2025	Member of the Board of the Center for Nanointegration Duisburg-Essen (CENIDE)
Since 01/2024	Subproject leader of the subproject A11 in the Collaborative Research Center/Transregio 270 (DFG SFB/TRR 270)
Since 03/2021	Junior Research Group leader, 'Surface Chemistry and Laser Processing' group (4 Scientific employees and 1 technician), Technical Chemistry I, University Duisburg-Essen (UDE)
06/2018–03/2021	Vice group leader, 'Biomedicine' group (5 Scientific employees and 1 technician), Technical Chemistry I, UDE
07/2017–06/2020	Scientific employee, DFG-funded project, in cooperation with the University Hamburg (Prof. Wolfgang Parak), Technical Chemistry I, UDE, Prof. habil. Dr.-Ing. Stephan Barcikowski
11/2016–06/2017	Scholarship, Technical Chemistry, UDE
01/2013–11/2015	Student assistant, Technical Chemistry I, UDE

Academic education and scientific degrees:

02/2022	PhD with honors (Dr. rer. nat mit Auszeichnung), Technische Chemie, Universität Duisburg-Essen, Supervisor: Prof. habil. Dr.-Ing. Stephan Barcikowski
11/2016–02/2022	Doctoral candidate, University Duisburg-Essen
10/2014–09/2016	Studies of Chemistry, University Duisburg-Essen, Degree: Master of Science
10/2009–09/2014	Studies of Chemistry, University Duisburg-Essen, Degree: Bachelor of Science

Research stays abroad:

06–07/2021	Paul Scherrer Institute (PSI), Topic: surface chemistry effects on electron-phonon coupling at liquid-metal interfaces. Collaboration with Prof. Anton Plech (KIT) and Prof. Sokolowski-Tinten (UDE)
09–11/2019	Stanford Linear Accelerator Center (SLAC). Topic: Determination of the e-ph coupling constant of gold colloids in different colloidal environments. Collaboration with Prof. Siegfried Glenzer (Head of HEDS at SLAC)
11/2018	European Synchrotron Radiation Facility. Topic: In situ spectroscopy during laser ablation of Zn in liquids. Collaboration with Prof. Anton Plech (KIT)

09/2018	European Synchrotron Radiation Facility. Topic: Investigation of the structural kinetics of ps laser fragmentation of suspended gold spheres. Collaboration with Prof. Anton Plech (KIT)

Awards and recognitions:

2024	Shafeev Award, for a particularly creative scientific achievement or an idea in the field of advanced nanoparticle generation and excitation by lasers in liquids.
2022	WLT Prize of the Wissenschaftliche Gesellschaft Lasertechnik e.V. for excellent achievements in the field of laser science
2021	Third place in the “from lab to market challenge” of chemstars.nrw
07/2022–06/2023	Scholarship of the Faculty of Chemistry, University Duisburg-Essen, for excellent female, young researcher
06/2022	Humboldt meets Leibniz travel and accommodation grant
2021	First place of the business idea competition of the ‘Center for Start-up, Innovation, and Entrepreneurship at the University of Duisburg-Essen in the innovation area ‘chemistry-based innovations.’
2021	First place of the ANGEL decennial award for the best scientific image
2020	PCCP Editor´s choice, ‘hot article’, for the article Ziefuss et al.: In situ structural kinetics of picosecond laser-induced heating and fragmentation of colloidal gold spheres, PCCP, 2019, 22, 4993-5001
2020	Journal cover: “Origin of laser-Induced Gold Surface Oxidation and Charge Density, and Its Role in Oxidation Catalysis, J. Phys. Chem. C, 2020, 124, 38”
09–11/2019	DAAD scholarship for doctoral students
06/2018	Travel scholarship of the Faculty of Chemistry, UDE, for oral contribution to the 5th int. ANGEL conference, Lyon, France

Service to the Scientific Community and Guest editorship

1. Special Issue on “New Materials for Additive Materials”, Advanced Engeneering Materials, Guest Editor (with Prof.Tibbetts, Virginia, and Prof. Barcikowski, UDE), 2025
2. Co-Chair of the conference New Frontiers in Materials Design for Laser Additive Manufacturing, 2025, Germany
3. Editor of Handbook of Handbook of Green Laser Synthesis & Processing of Colloids, 2025
4. Special Issue on “Advances in Pulsed Laser Synthesis of Nanoparticles in Liquids”, Science China Physics, Mechanics & Astronomy, Guest Editor (with Prof. Zhigilei, Virginia, and Prof. Barcikowski, UDE), 2022
5. Special Issue on “Laser-Enabled Synthesis and Processing of Nanoparticles in Liquids”, Journal of Physical Chemistry C (JPCC), Guest Editor (with Prof. Tibbets, Virginia, and Prof. Barcikowski, UDE), 2024

Publication activities

Peer-Reviewed articles (Google Scholar h-index: 18)

1. **A. R. Ziefuss,** N. Stratmann, C. Reifenrath, G. Kanu, N. Berndt, S. Disch, and S. Barcikowski, Thermal–penetration–driven, record nanoparticle yield and throughput by high-power, ultraviolet nanosecond microparticle laser fragmentation, Optics Letters, 51, 2, 2026 https://doi.org/10.1364/OL.582519
2. F. N. Lomo, D. Zhang, D. Qiu, I. M. Kuşoğlu, **A. R. Ziefuss**, S. Barcikowski, M. R. Field, M. A Easton, Direct evidence of TiC nanoparticle-induced nucleation in laser powder bed fused AlSi10Mg, Scripta Materialia, 274,2026 https://doi.org/10.1016/j.scriptamat.2025.117143
3. N. Stratmann, M. Willeke, S. Leupold, K. Loza, A. Lüddecke, A. Kwade, M. Schmidt, S. Barcikowski, **A. R. Ziefuss**, Localized Energy Absorption through LaB6 Surface Modification of PA12 Enables Enhanced Tensile Performance in Diode Laser PBF-LB, Chemical Methods, 2025 https://doi.org/10.1002/cmtd.202500101
4. V. Nallathambi, P. Gabriel, X. Chen, Z. Rao, K. Skokov, O. Gutfleisch, S. Barcikowski, **A. R. Ziefuss**, B. Gault: Effect of Ag nano-additivation on microstructure formation in Nd-Fe-B magnets built by laser powder bed fusion, Acta Materialia, 2025, https://doi.org/10.1016/j.actamat.2025.121353
5. M. Grünewald, C. Schlör, K. Popp, S. Gann**, A. R. Ziefuss**, Ihsan Murat Kusoglu, Stephan Barcikowski, Joachim Greiner, Peter Middendorf, Piotr Gruber, Michał Olejarczyk, Tomasz Kurzynowski, Zhengze Wang, Yajiang Huang, Mert Coskun, Burçin Özbay Kısasöz, Ebubekir Koc, Johannes Rudloff: Energy Density Optimization in Laser-based Powder Bed Fusion of Nano-modified PA12 Powder Feedstocks, Advanced Engineering Materials, 2025 https://doi.org/10.1007/s10853-025-11128-6
6. I. M. Kusoglu, S. Garg, A. Abel, P. V. Balachandran, S. Barcikowski, L. Becker, J.-S. Bernsmann, J. Boseila, C. Broeckmann, M. Coskun, M. Dreyer, M. East, M. Easton, N. Ellendt, S. Gann, B. Gökce, M. Goßling, J. Greiner, P. Gruber, M. Grünewald, K. Gurung, N. Hantke, F. Hengsbach, H. Holländer, B. Van Hooreweder, K.-P. Hoyer, Y. Huang, F. Huber, O. Kessler, B. Ö. Kısasöz, S. Kleszczynski, E. Koc, T. Kurzynowski, A. Kwade, S. Leupold, D. Liu, F. Lomo, A. Lüddecke, G. A. Luinstra, D. A. Mauchline, F. Meyer, L. Meyer, P. Middendorf, S. Nolte, M. Olejarczyk, L. Overmeyer, A. Pich, S. Platt, F. Radtke, R. Ramm, S.-K. Rittinghaus, R. Rothfelder, J. Rudlo, M. Schaper, M. L. Scheck, J. H. Schleifenbaum, M. Schmidt, J. T. Sehrt, Y. P. Shabanga, A. Sommereyns, R. Steuer, L. S. Tisha, A. Toenjes, C. Tuck, A. Vaghar, B. Vrancken, Z. Wang, S. Weber, J. Wegner, B.-X. Xu, Y. Yang, D. Zhang, E. Zhuravlev, **A. R. Ziefuss**: Unveiling the Impact of Nanoparticle-Based Feedstock Modification on Laser Powder Bed Fusion Process: A Wide-Scale Interlaboratory Study along the Entire Process Chain, Advanced Engineering Materials, 2025, https://doi.org/10.1002/adem.202402930
7. M. Willeke, A. Sommereyns, S. Leupold, A. Lüddecke, A. Kwade, N. Hantke, J. T. Sehrt, M. Schmidt, S.Barcikowski, **A. R. Ziefuss***: Comparative Evaluation of Surface Sensitizers for Near-Infrared Laser Powder Bed Fusion of Polyamide 12, Advanced Engineering Materials, 2025, https://doi.org/10.1002/adem.202500466
8. S. Leupold, M. Willeke, A. Sommereyns, M. Gehring, P. Y. Dineshbhai, N. Stratmann, **A. R. Ziefuss**, S.-Paul Kopp, S. Barcikowski, M. Schmidt, Geometry-Based Scan Curve Analysis: Rapid Method for the Evaluation for Scan Strategies in Powder Bed Fusion, Advanced Engineering Materials, 2025 2402929,

https://doi.org/10.1002/adem.202402929

9. P. Gabriel, J. Liu, Franziska Staab, R. Streubel, M. Miertz, K. Durst, O. Gutfleisch, S. Barcikowski, **A. R. Ziefuss***: Surface modification of Nd-Fe-B feedstocks by Cu nanoparticles to refine the microstructure after melting and rapid solidification, Journal of Alloys and Compounds, 2025, 1020, 179308, https://doi.org/10.1016/j.jallcom.2025.179308

10. P. Gabriel, V. Nallathambi, J. Liu, F. Staab, T. D. Oyedeji, Y. Yang, N. Hantke, E. Adabifiroozjaei, O. Recalde-Benitez, L. Molina-Luna, Z. Rao, B. Gault, J. T. Sehrt, F. Scheibel, K. Skokov, B.-X. Xu, K. Durst, O. Gutfleisch, S. Barcikowski, **A. R. Ziefuss***: Boosting Coercivity of 3D Printed Hard Magnets through Nano-Modification of the Powder Feedstock, Advanced Science, 2024, 2407972, https://doi.org/10.1002/advs.202407972

11. N. Stratmann, M. Willeke, S. Leupold, M. Schmidt, S. Barcikowski, **A. R. Ziefuss**: Near-infrared surface sensitizing of PA12 to enable diode laser-based Powder Bed Fusion, Procedia CIRP, 2024, 124, 69, https://doi.org/10.1016/j.procir.2024.08.073

12. S. Leupold, M. Willeke, C. Leong, N. Stratmann, A. Sommereyns, **A. R. Ziefuss**, S.-P. Kopp, S. Barcikowski, M. Schmidt: Near-infrared surface sensitizing of PA12 to enable diode laser-based Powder Bed Fusion, Procedia CIRP, 2024, 124, 61-64, https://doi.org/10.1016/j.procir.2024.08.071

13. **A. R. Ziefuss**, P. Gabriel, R. Streubel, M. Nachev, B. Sures, F. Eibl, S. Barcikowski: *In-situ* composition analysis during laser powder bed fusion of Nd-Fe-based feedstock using machine-integrated optical emission spectroscopy, Materials & Design, 2024, 113211, https://doi.org/10.1016/j.matdes.2024.113211

14. M. Gharib, A. J. Yates, S. Sanders, J. Gebauer, S. Graf, **A. R. Ziefuss**, G. Kassier, C. Rehbock, S. Barcikowski, H. Weller, A. Alabastri, P. Nordlander, W. J. Parak, I. Chakraborty: Golden Plasmophores with Tunable Photoluminescence and Outstanding Thermal and Photothermal Stability, Advanced Optical Materials, 2024, 12, 14, 2302833. https://doi.org/10.1002/adom.202302833

15. J. Liu, Y. Yang, F. Staab, C. Doñate-Buendia, R. Streubel, B. Gökce, F. Maccari, P. Gabriel, B. Zingsem, D. Spoddig, K. Durst, M. Farle, O. Gutfleisch, S. Barcikowski, K. Skokov, **A. R. Ziefuss**: Influence of Colloidal Additivation with Surfactant-Free Laser-Generated Metal Nanoparticles on the Microstructure of Suction-Cast Nd–Fe–B Alloy, Advanced Engineering Materials, 25, 22, 2023, 2301054, https://doi.org/10.1002/adem.202301054

16. M. Spellauge, M. Tack, R. Streubel, Matthias Miertz, S. Reichenberger, S. Barcikowski, H. P. Huber, and **A. R. Ziefuss**: Photo-Mechanical Laser Fragmentation of IrO2 Microparticles for the Synthesis of Active and Redox-sensitive Colloidal Atom clusters, SMALL, 2023, 19, 10, 2206485, https://doi.org/10.1002/smll.202206485

17. S. Tahir, J. Landers, S. Salamon, D. Koch, C. Doñate-Buendía, **A. R. Ziefuss**, H. Wende, B. Gökce: Development of Magnetocaloric Microstructures from Equiatomic Iron–Rhodium Nanoparticles through Laser Sintering, Advanced Engineering Materials, 2023. 25, 20, 2300245 https://doi.org/10.1002/adem.202300245

18. A. Plech, M. Tack, H. Huang, M. Arefev, **A. R. Ziefuss**, M. Levantino, H. Karadas, C. Chen, L. V Zhigilei, S. Reichenberger: Physical Regimes and Mechanisms of Picosecond Laser Fragmentation of Gold Nanoparticles in Water from X-ray Probing and Atomistic Simulations, ACS Nano, 2024, 18, 15, 10527-10541

https://doi.org/10.1021/acsnano.3c12314

19. A. Plech, **A. R. Ziefuss**, M. Levantino, R. Streubel, S. Reich, S. Reichenberger: Low efficiency of laser heating of gold particles at the plasmon resonance – an X-ray calorimetry study, ACS Photonics, 2022, 9, 9, 2981 – 2990, https://doi.org/10.1002/adem.202300245

20. I. M. Kusoglu, P. Vieth, S. Heiland, F. Huber, A. Lüddecke, **A. R. Ziefuss**, A. Kwade, M. Schmidt, M.Scharper, S. Barcikowski, G. Grundmeier: Microstructure and corrosion properties of PBF-LB produced carbide nanoparticles additivated AlSi10Mg parts, Procedia CIRP, 2022, 111, 10-13, https://doi.org/10.1016/j.procir.2022.08.046

21. **A. R. Ziefuss**, M. Willeke, M. Miertz, A. Heinemann, C. Rehbock: Influence of Pt alloying on the fluorescence of fully inorganic, colloidal gold nanoclusters, ChemPhysChem, 2022, 6, 19, https://doi.org/10.1002/cphc.202200033

22. **A. R. Ziefuss**, T. Hupfeld, S. W. Meckelmann, M. Meyer, O. J. Schmitz, W. Kaziur-Cegla, L. K.Tintrop, T. C. Schmidt, B. Gökce, S. Barcikowski: Ultrafast cold-brewing of coffee by picosecond-pulsed laser extraction, 2022, 6, 19, https://doi.org/10.1038/s41538-022-00134-6

23. S. Reich, Y. Klügl, **A. R. Ziefuss**, R. Streubel, J. Göttlicher, A. Plech: Speciation in nanosecond laser ablation of zinc in water, Sci. China Phys. Mech., 2022, 65, 274205

24. M. Kusoglu, F. Huber, C. Donate-Buendia, **A. R. Ziefuss**, B. Gökce, J. T. Sehrt, A. Kwade, M. Schmidt, S. Barcikowski: Nanoparticle Additivation Effects on Laser Powder Bed Fusion of Metals and Polymers—A Theoretical Concept for an Inter-Laboratory Study Design All Along the Process Chain, Including Research Data Management, Materials, 2021, 14, 17, 4892, https://doi.org/10.3390/ma14174892

25. **A. R. Ziefuss**, T. Steenbock, D. Benner, A. Plech, J. Göttlicher, M. Teubner, B. Grimm-Lebsanft, C. Rehbock, C. Comby-Zerbino, R. Antoine, D. Amans, I. Chakraborty, G. Bester, M. Nachev, B. Sures, M. Rübhausen, W. J. Parak, S. Barcikowski: Photoluminescence of Fully Inorganic Colloidal Gold Nanocluster and Their Manipulation Using Surface Charge Effects, 2021, 33, 31, 21015493, https://doi.org/10.1002/adma.202101549

26. Y. Zeng, S. Havenridge, M. Gharib, A. Baksi, K. L. D. M. Weerawardene, **A. R. Ziefuss**, C. Strelow, C. Rehbock, A. Mews, S. Barcikowski, M. M. Kappes, W. J. Parak, C. M. Aikens, I. Chakraborty: Impact of Ligands on Structural and Optical Properties of Ag29 Nanoclusters, J. Am. Chem. Soc., 2021, 134, 25, https://doi.org/10.1021/jacs.1c01799

27. L. Zhu, Y. Zeng, M. Teubner, B. Grimm-Lebsanft, **A. R. Ziefuss**, C. Rehbock, M. A. Rübhausen, S. Barcikowski, W. J. Parak, I. Chakraborty: Surface engineering of Gold Nanoclusters Protected with 11-Mercaptoundecanoic Acid for Photoluminescence Sensing, ACS Appl. Nano Mater., 2021, 4, 3, 3197-3203, https://doi.org/10.1021/acsanm.1c00404

28. **A. R. Ziefuss**, I. Haxhiaj, S. Müller, M. Gharib, O. Gridina, C. Rehbock, I. Chakraborty, B. Peng, M. Muhler, W. J. Parak, S. Barcikowski, S. Reichenberger: origin of laser-Induced Gold Surface Oxidation and Charge Density, and Its Role in Oxidation Catalysis, J. Phys. Chem. C, 2020, 124, 38, https://doi.org/10.1021/acs.jpcc.0c06257

29. S.Reich, J. Göttlicher, **A. R. Ziefuss**, R. Streubel, A. Letzel, A. Menzel, O. Mathon, S. Pascarelli, T. Baumbach, M. Zuber, B. Gökce, S. Barcikowski, A. Plech: In situ speciation

and spatial mapping of Zn products during laser ablation in liquids (PLAL) by combined synchrotron methods, submitted to Nanoscale, 2020, 12, 14011-14020, https://doi.org/10.1039/D0NR01500H

30. **A. R. Ziefuss**, S. Reich, S. Reichenberger, M. Levantino, A. Plech: In situ structural kinetics of picosecond laser-induced heating and fragmentation of colloidal gold spheres, PCCP, 2019, 22, 4993-5001, https://doi.org/10.1039/C9CP05202J
31. L. Zhu, M. Gharib, C. Becker, Y. Zeng, **A. R. Ziefuss**, L. C., A.M. Akilany, C. Rehbock, S. Barcikowski, W.J. Parak, I. Chakraborty: Synthesis of Fluorescent Silver Nanoclusters: Introducing Bottom-Up and Top-Down Approaches to Nano chemistry in a Single Laboratory Class, Chem. Educ. 2019, 97,1, 239-243, https://doi.org/10.1021/acs.jchemed.9b00342
32. **A. R. Ziefuss**, C. Rehbock, S. Barcikowski: Synergism between specific halide anion and pH effects during nanosecond laser fragmentation of ligand-free gold nanoparticles, Langmuir, 2019, 35, 6630-6639, https://doi.org/10.1021/acs.langmuir.9b00418
33. F. Waag, Y. Li, **A. R. Ziefuss**, E. Bertin, M. Kamp, V. Duppel, G. Marzun, L. Kienle, S. Barcikowski, B. Gökce: Scalable, kinetically-controlled laser-synthesis of colloidal non-noble high-entropy alloy nanoparticles, JPCC, 2019, 9, 18547-18558, https://doi.org/10.1039/C9RA03254A
34. R. Dinkel, J. Jakobi, **A. R. Ziefuss**, S. Barcikowski, B. Braunschweig, W. Peukert: Role of Citrate and NaBr at the Surface of Colloidal Gold Nanoparticles during Functionalization, JPCC, 2018, 122, 27383- 27391, https://doi.org/10.1021/acs.jpcc.8b07897
35. **A. R. Ziefuss**, S. Reichenberger, C. Rehbock, I. Chakraborty, M. Gharib, W. Parak, S. Barcikowski: Laser fragmentation of Colloidal Gold Nanoparticles with High-Intensity Nanosecond Pulses is Driven by a Single-Step Fragmentation Mechanism with a Defined Educt Particle-Size Threshold, JPCC, 2018, 122, 22125-22136, https://doi.org/10.1021/acs.jpcc.8b04374
36. Letzel, M. Santoro, J. Frohleiks, **A. R. Ziefuss**, S. Reich, A. Plech, E. Fazio, F. Neri, S. Barcikowski, B. Gökce: How the re-irradiation of a single ablation spot affects cavitation bubble dynamics and nanoparticles properties in laser ablation in liquids, Appl. Surf. Sci., 2018, 473, https://doi.org/10.1016/j.apsusc.2018.12.025
37. R. Manicini, L. Gamrad, D. Werner, D. Thedemann, U. Taylor, **A. R. Ziefuss**, .Rehbock, S. Klein, W. Kues. S. Barcikowski, D. Rath: Triplex-hybridizing bioconjugated gold nanoparticles for specific Y-chromosome sequence targeting of bull spermatozoa, Analyst, 2017, 142, 2020, https://doi.org/10.1039/C6AN02461K
38. M. Lau, **A. R. Ziefuss**, T. Komossa, S. Barcikowski: Inclusion of supported gold nanoparticles into their semiconductor support, PCCP, 2015, 17, 29311-29318, https://doi.org/10.1039/C5CP04296H

Further scientific publications

37. **A. R. Ziefuss,** S. Barcikowski, G. A. Luinstra: What If Materials Could Think Ahead? Advanced Engineering Material, 2025, https://doi.org/10.1002/adem.202501628
38. K. Tibbets, S. Barcikowski, **A. R. Ziefuss,** Handbook of Green Laser Synthesis and Processing, 3rd Edition, DuePublico, 2025

39. K. Tibbets, S. Barcikowski, **A. R. Ziefuss**, Laser-Enabled Synthesis and Processing of Nanoparticles in Liquids“, Editorial, Journal of Physical Chemistry C, 2025

40. I. M. Kusoglu, S. Garg, A. Abel, P. V. Balachandran, S. Barcikowski, L. Becker, J.-S. Bernsmann, J. Boseila, C. Broeckmann, M. Coskun, M. Dreyer, M. East, M. Easton, N. Ellendt, S. Gann, B. Gökce, M. Goßling, J. Greiner, P. Gruber, M. Grünewald, K. Gurung, N. Hantke, F. Hengsbach, H. Holländer, B. Van Hooreweder, K.-P. Hoyer, Y. Huang, F. Huber, O. Kessler, B. Ö. Kısasöz, S. Kleszczynski, E. Koc, T. Kurzynowski, A. Kwade, S. Leupold, D. Liu, F. Lomo, A. Lüddecke, G. A. Luinstra, D. A. Mauchline, F. Meyer, L. Meyer, P. Middendorf, S. Nolte, M. Olejarczyk, L. Overmeyer, A. Pich, S. Platt, F. Radtke, R. Ramm, S.-K. Rittinghaus, R. Rothfelder, J. Rudlo, M. Schaper, M. L. Scheck, J. H. Schleifenbaum, M. Schmidt, J. T. Sehrt, Y. P. Shabanga, A. Sommereyns, R. Steuer, L. S. Tisha, A. Toenjes, C. Tuck, A. Vaghar, B. Vrancken, Z. Wang, S. Weber, J. Wegner, B.-X. Xu, Y. Yang, D. Zhang, E. Zhuravlev, **A. R. Ziefuss**, DFG SPP2122 Interlaboratory Study Dataset., 2025, DOI: 10.17185/duepublico/82674

41. I.M. Kuşoğlu, **A. R. Ziefuss**, S. Barcikowski, Booklet for Standard Operational Procedures of DFG SPP2122 Interlaboratory Study measuring the effect of nanoparticles on the entire PBF-LB process chain of AlSi10Mg and PA12. 2024. DOI: 10.17185/duepublico/82630

42. P. Gabriel, S. Barcikowski, **A. R. Ziefuss**, Kleine Partikel mit großer Wirkung… wie laser-generierte Nanopartikel den 3D-Druck von Permanent-magneten revolutionieren könnten, Unikate, 60, 2024

43. S. Barcikowski, L. Zhigilei, **A. R. Ziefuss,** Advances in Pulsed Laser Synthesis of Nanoparticles in Liquids, Editorial, Science China Physics, Mechanics & Astronomy, 2022

Patent

A. Sommereyns, S. Leupold, M. Schmidt, S. Barcikowski S., A. R. Ziefuss, M. Willeke: DE 10 2023 208 853 „Multiwellenlängenlaserstrahlsystem zur additiven Fertigung mit submikroskalig additivierten Pulvern“

Conference Presentations:

Invited, Key-Notes, Plenary:

1. **A. R. Ziefuss**, Small Particles, Big Impact: Laser-Generated, Surfactant-Free Nanoparticles for Functional Materials in Additive Manufacturing, AMM 2025, Wroclaw, Polen **(Plenary Talk)**
2. A. R. Ziefuss, S. Barcikowski, Kleine Partikel, große Wirkung. Wie lasergenerierte Nanopartikel den 3D-Druck veredeln, June 2025 Mittweider Lasertagung, Mittweider, Germany **(Keynote)**
3. **A. R. Ziefuss**, P. Gabriel, N. Stratmann, S. Barcikowski, Boosting Coercivity of 3D Printed Hard Magnets Through Nano Modification of the Powder Feedstock, Matframe, Hannover, Germany **(Plenary)**
4. **A. R. Ziefuss**, Small Particles, Big Potential: The Power of Laser-Generated Nanoparticles in 3D Printing, CENIDE Conference, Bergisch Gladbach, Germany, **(invited oral presentation)**
5. **A. R. Ziefuss,** Boosting Coercivity in Additively Manufactured Magnets Through Nano-Functionalization of NdFeB Powder, March 2025, DPG Frühjahrstagung, Regensburg, Germany **(invited oral presentation)**
6. **A. R. Ziefuss**, H. Huber, C. Rehbock, S. Reichenberger, M.Spellauge, N. Stratmann, M. Tack, M. Willeke, S. Barcikowski, Breaking boundaries: Laser-driven nanoparticle

formation and microparticle crushing in liquids, Mai 2024, 7th int. ANGEL conference, Charlottesville, USA **(invited oral presentation)**

7. **A. R. Ziefuss**, Ultrafast cold-brewing of coffee by picosecond-pulsed laser extraction, September 2022, Connecting Markets, Emmerich, Germany **(invited oral presentation)**
8. **A. R. Ziefuss**, Synthesis, Surface chemistry, and application of fully inorganic gold nanoclusters by pulsed laser fragmentation in liquids, August 2022, 12th CIRP conference on photonic technologies (LANE 2022) **(invited oral presentation)**

Selected Conference Presentations

9. **A. R. Ziefuss**, N. Stratmann, M. Willeke, S. Leupold, M. Schmidt, S. Barcikowski, Feedstock modification for Diode Laser-Based Powder Bed Fusion of PA12 using Laser-generated NIR-absorbing Nanoparticles in liquids, June 2024, LPM conference, San Sebastian, Spain (oral presentation)
10. **A. R. Ziefuss**, T. Hupfeld, T. Friedenauer, S. W. Meckelmann, O. Schmitz, L. Trintrop, T. Schmidt, S. Barcikowski, Are the Jedi from Star Wars masters of brewing coffee? Partec 2023, Nürnberg, Germany (oral presentation)
11. **A. R. Ziefuss**, S. Reich, S. Reichenberger, M. Levantino, S. Barcikowski, A. Plech, Mechanism study of picosecond laser fragmentation by in situ X-ray scattering, June 2021, online conference, 5th int. Angel conference (poster presentation)
12. **A. R. Ziefuss**, T. Steenbock, D. Benner, A. Plech, J. Göttlicher. M. Teubner, B. Grimm-Lebsanft, C. Rehbock, C. Comby-Zerbino, R. Antoine, D. Amans, I. Chakraborty, G. Bester, M. Nachev, B. Sures, M. Rübhausen, W. J. Parak, S. Barcikowski, Surface charge density effects on the fluorescence of laser-generated and fully inorganic, different-sized gold nanocluster, June 2021, online on-demand, The 22nd International Symposium on Laser Precision Microfabrication (oral presentation)
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