

IAKAB, STEFANIA-ALEXANDRA, PHD

GENERAL INFORMATION



Post Doc

Technische Hochschule Mannheim
CeMOS – Research and Transfer Center
Paul-Wittsack-Str. 10, 68163 Mannheim, Germany
Email: s.iakab@th-mannheim.de
Tel: +49 621 292-6586

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ACADEMIC EDUCATION & QUALIFICATION

Year(s)	Education
2017-2021	Ph.D. in Technologies for Nanosystems, Bioengineering and Energy, Rovira i Virgili University, Tarragona, Spain
2014-2016	Master's degree in Biomaterials, Faculty of Physics, Babes-Bolyai University, Cluj-Napoca, Romania
2011-2014	Bachelor's degree in Medical Physics, Faculty of Physics, Babes-Bolyai University, Cluj-Napoca, Romania

SCIENTIFIC EDUCATION & QUALIFICATION

Year(s)	Education
Since 2021	Postdoc in Spatial metabolomics, CeMOS – Research and Transfer Center, TH Mannheim, Germany
2021	Doctoral thesis: Gold-coated black silicon nanostructured substrate for SERS and SALDI-MS multimodal imaging of biological applications, supervised by Prof. Dr. Xavier Correig-Blanchar, and Dr. Maria Garcia-Altares, Rovira i Virgili University, Tarragona, Spain
2016	Master's thesis: Polymer aided silver nanoparticle tailoring with potential application as biomaterial dopants, supervised by Prof. Dr. Simion Simon and Dr. Adriana Vulpoi-Lazar, Faculty of Physics, Babes-Bolyai University, Cluj-Napoca, Romania

PROFESSIONAL EXPERIENCE

Year(s)	Experience
Since 2021	Group Leader – Spatialomics at CeMOS – Research and Transfer Center, TH Mannheim, Germany
2019	PhD internship in the Raman Imaging Group (ZOR), Faculty of Chemistry, Jagiellonian University, Krakow, Poland, supervised by Prof. Kamilla Malek
2017-2021	Junior Researcher at Rovira i Virgili University, Tarragona (Spain)
2015-2016	Erasmus+ Fellow at The Institute of Nanoscience and Materials of Aragon – INMA (CSIC-Universidad de Zaragoza)
2014-2016	Research Assistant at Babes-Bolyai University, Cluj-Napoca (Romania)

OTHER QUALIFICATIONS/ROLES/RESPONSIBILITIES

Year(s)	Qualifications/Roles/Responsibilities
2019	Best poster award at 17th International Meeting on Chemical Sensors 2018 Vienna, Austria; Poster "Gold-coated Black Silicon: An Efficient Substrate for Laser Desorption Ionization Mass Spectrometry"
2017	Grant BES-2016-076483 from the Spanish Ministry of Economy and Competitiveness 2017; Duration 4 years
2014-2015	Erasmus+ Programme for Education from the European Commission 2014; Duration 9 months

SELECTED PUBLICATIONS

1. [Iakab S-A](#), Marxfeld HA, Richter FM, et al. Reliable Identification of Alpha2u-Globulin and Lysozyme Accumulation in Rat Kidney by Label-Free MALDI Mass Spectrometry Imaging. **Toxicologic Pathology**. 2025;0(0). doi:10.1177/01926233251368855
2. Gruber, L., Schmidt, S., Enzlein, T., Vo, H. G., Bausbacher, T., Cairns, J. L., Ucal, Y., Keller, F., Kerndl, M., Abu Sammour, D., Sharif, O., Schabbauer, G., Rudolf, R., Eckhardt, M., [Iakab, S. A.](#), Bindila, L., & Hopf, C. (2025). Deep MALDI-MS spatial omics guided by quantum cascade laser mid-infrared imaging microscopy. **Nature communications**, 16(1), 4759.
3. Mahamdi T, Gomez Serna C, Giné R, Rofes J, Mohammed S, Ràfols P, Correig X, García-Altare M, Hopf C, [Iakab S-A](#), and Yanes O. Improving MALDI Mass Spectrometry Imaging Performance: Low-Temperature Thermal Evaporation for Controlled Matrix Deposition and Improved Image Quality. **Journal of the American Society for Mass Spectrometry** 2025 36 (5), 1100-1110. DOI: 10.1021/jasms.5c00015
4. [Iakab S-A](#); Baquer G; Lafuente M; Pina M P; Ramírez J L; Ràfols P; Correig-Blanchar X; García-Altare M. SALDI-MS and SERS Multimodal Imaging: One Nanostructured Substrate to Rule Them Both. **Analytical Chemistry** 2022 94 (6), 2785-2793. DOI: 10.1021/acs.analchem.1c04118
5. [Iakab S-A](#), Ràfols P, Correig-Blanchar X, and García-Altare M. Perspective on Multimodal Imaging Techniques Coupling Mass Spectrometry and Vibrational Spectroscopy: Picturing the Best of Both Worlds. **Analytical Chemistry** 2021 93 (16), 6301-6310. DOI: 10.1021/acs.analchem.0c04986
6. [Iakab S-A](#), Ràfols P, Tajés M, Correig-Blanchar X, and García-Altare M. Gold Nanoparticle-Assisted Black Silicon Substrates for Mass Spectrometry Imaging Applications. **ACS Nano** 2020 14 (6), 6785-6794, DOI: 10.1021/acsnano.0c00201
7. [Iakab, S.A.](#), Sementé, L., García-Altare, M. et al. Raman2imzML converts Raman imaging data into the standard mass spectrometry imaging format. **BMC Bioinformatics** 21, 448 (2020). <https://doi.org/10.1186/s12859-020-03789-8>

HOPF, CARSTEN, DR. RER. NAT., DIPL.-BIOCHEM.

GENERAL INFORMATION



W2 Professor

Hochschule Mannheim
Center for Mass Spectrometry and Optical Spectroscopy
Paul-Wittsack-Str. 10, 68163 Mannheim, Germany
Email: c.hopf@hs-mannheim.de
Tel: +49 621 292-6802

●DOB: 21.12.1967 ●Sex: Male ●Nationality: German
Familial Obligations: Married

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ACADEMIC EDUCATION & QUALIFICATION

Year(s)	Education
1989-1995	Dipl.-Biochem.: Eberhard-Karls-University Tübingen ("sehr gut"); diploma thesis in neurochemistry at Max-Planck-Institute for Developmental Biology, Dept. Biochemistry
1992-1993	Graduate Exchange Student in Biochemistry and Biophysics: Oregon State University, Corvallis, USA

SCIENTIFIC EDUCATION & QUALIFICATION

Year(s)	Education
1995-1998	Dr. rer. nat. Dissertation: Max-Planck-Institute for Developmental Biology, Dept. Biochemistry, and Eberhard-Karls-University Tübingen (supervisors: PD Dr. Werner Hoch, Prof. Dr. Bernd Hamprecht)
1995-1998	Member DFG Graduiertenkolleg "Neurobiology"

PROFESSIONAL EXPERIENCE

Year(s)	Experience
Since 2021	Associated Prof., Medical Faculty, Heidelberg University
Since 2020	Associated Prof., Medical Faculty Mannheim, Heidelberg University
Since 2011	Head, Institute of Instrumental Analytics and Bioanalytics, Mannheim University of Applied Sciences, Dept. of Biotechnology
2012-2014	Cellzome GmbH – a GSK company, Heidelberg: Member of the Leadership Team ("Geschäftsführung"), e.g. responsible for: all Cellzome Neuroscience R&D, Member of GSK's global „Phenotypic Drug Discovery“ team
Since 2009	Member, Institute of Medical Technology of Heidelberg University and Mannheim University of Applied Sciences
Since 2005	W2-Professor (Bioanalytics, Drug Discovery, Proteomics) at Mannheim University of Applied Sciences, Dept. of Biotechnology
2001-2012	Cellzome AG, Heidelberg (Analytical Biochemistry/Proteomics, Target Identification, Drug Discovery), most recently as Assoc. Director of Biochemistry and Business Development Technology
1999-2001	EMBO-Postdoctoral Fellow: The Johns Hopkins University School of Medicine, Department of Neuroscience (Prof. Dr. Paul Worley), Baltimore, USA

OTHER QUALIFICATIONS/ROLES/RESPONSIBILITIES

Year(s)	Qualifications/Roles/Responsibilities
Since 2021	Deputy Head, Scientific Advisory Board, BioRN Cluster
Since 2020	Theme Advisory Panel, Bio-Mass Spectrometry, The Rosalind-Franklin Institute, UK
Since 2017	Spokesperson and scientific coordinator: BMBF consortium M ² Aind ("multimodal analytics and intelligent sensorics in health industry")
Since 2015	Head, Rhine-Neckar Center for MS imaging and fingerprinting, Bruker reference center

Year(s)	Qualifications/Roles/Responsibilities
Since 2021	Deputy Head, Scientific Advisory Board, BioRN Cluster
Since 2020	Theme Advisory Panel, Bio-Mass Spectrometry, The Rosalind-Franklin Institute, UK
Since 2014	Project leader M ² oBiTE – Biopsy analytics and Theranostics Development, BMBF Forschungscampus M ² OLIE („Mannheim Molecular Intervention Environment“)
2011-2016	Spokesperson and scientific coordinator: Center for Applied Research „Applied Biomedical Mass Spectrometry“ (ABIMAS)
Since 2005	Referee for scientific journals (e.g.); Nat. Comm., Anal. Chem. ; J. Proteome Res.; Brit. J. Cancer; J. Chromatography A ; BBA; ACS Chem. Neurosci.; Pharmacol. Res.; and scientific institutions (e.g. ERC, DFG, BMBF/PTJ, BMBF/AiF, FFG, National Science Center, Polen)
1990-1995	Scholarship of the German National Academic Merit Foundation

SELECTED PUBLICATIONS

- Gruber, L., Schmidt, S., Enzlein, T., Vo, H. G., Bausbacher, T., Cairns, J. L., Ucal, Y., Keller, F., Kerndl, M., Abu Sammour, D., Sharif, O., Schabbauer, G., Rudolf, R., Eckhardt, M., Iakab, S. A., Bindila, L., & Hopf, C. (2025). Deep MALDI-MS spatial omics guided by quantum cascade laser mid-infrared imaging microscopy. **Nature communications**, 16(1), 4759.
- Cairns, J. L., Huber, J., Lewen, A., Jung, J., Maurer, S. J., Bausbacher, T., Schmidt, S., Levkin, P. A., Sevin, D., Göpflich, K., Koch, P., Kann, O., Hopf, C., (2024). Mass-Guided Single-Cell MALDI Imaging of Low-Mass Metabolites Reveals Cellular Activation Markers, **Adv. Sci.** 2025, 12, 2410506
- Unger MS, Blank M, Enzlein T, Hopf C. Label-free cell assays to determine compound uptake or drug action using MALDI-TOF mass spectrometry. **Nat Protoc.** 2021 Dec;16(12):5533-5558.
- Enzlein T, Cordes J, Munteanu B, Michno W, Serneels L, De Strooper B, Hanrieder J, Wolf I, Chávez-Gutiérrez L, Hopf C. Computational Analysis of Alzheimer Amyloid Plaque Composition in 2D- and Elastically Reconstructed 3D-MALDI MS Images. **Anal Chem.** 2020 Nov 3;92(21):14484-14493.
- Erich K, Reinle K, Müller T, Munteanu B, Sammour DA, Hinsenkamp I, Gutting T, Burgermeister E, Findeisen P, Ebert MP, Krijgsveld J, Hopf C. Spatial Distribution of Endogenous Tissue Protease Activity in Gastric Carcinoma Mapped by MALDI Mass Spectrometry Imaging. **Mol Cell Proteomics.** 2019 Jan;18(1):151-161.
- Rabe JH, A Sammour D, Schulz S, Munteanu B, Ott M, Ochs K, Hohenberger P, Marx A, Platten M, Opitz CA, Ory DS, Hopf C. Fourier Transform Infrared Microscopy Enables Guidance of Automated Mass Spectrometry Imaging to Predefined Tissue Morphologies. **Sci Rep.** 2018 Jan 10;8(1):313.
- Munteanu B, Meyer B, von Reitzenstein C, Burgermeister E, Bog S, Pahl A, Ebert MP, Hopf C. Label-free in situ monitoring of histone deacetylase drug target engagement by matrix-assisted laser desorption ionization-mass spectrometry biotyping and imaging. **Anal Chem.** 2014; 86(10), 4642-7.
- Fülöp A, Porada MB, Marsching C, Blott H, Meyer B, Tambe S, Sandhoff R, Junker HD, Hopf C. 4-Phenyl- α -cyanocinnamic acid amide: screening for a negative ion matrix for MALDI-MS imaging of multiple lipid classes. **Anal Chem.** 2013 Oct 1;85(19):9156-63.
- Dawson MA, Prinjha RK, Dittmann A, Giotopoulos G, Bantscheff M, Chan Wl, Robson SC, Chung CW, Hopf C, Savitski MM, Huthmacher C, Gudgin E, Lugo D, Beinke S, Chapman TD, Roberts EJ, Soden PE, Auger KR, Mirguet O, Doehner K, Delwel R, Burnett AK, et al. Inhibition of BET recruitment to chromatin as an effective treatment for MLL-fusion leukaemia. **Nature** 2011; 478(7370), 529-33.
- Ramsden N, Perrin J, Ren Z, Lee BD, Zinn N, Dawson VL, Tam D, Bova M, Lang M, Drewes G, Bantscheff M, Bard F, Dawson TM, Hopf C. Chemoproteomics-based design of potent LRRK2-selective lead compounds that attenuate Parkinson's disease-related toxicity in human neurons. **ACS Chem Biol.** 2011; 6(10), 1021-8.
- Bantscheff M*, Hopf C*, Savitski MM, Dittmann A, Grandi P, Michon AM, Schlegl J, Abraham Y, Becher I, Bergamini G, Boesche M, et al. Chemoproteomics profiling of HDAC inhibitors reveals selective targeting of HDAC complexes. **Nat Biotechnol.** 2011; 29(3), 255-65. *equal contribution.
- Xu D*, Hopf C*, Reddy R, Cho RW, Guo L, Lanahan A, Petralia RS, Wenthold RJ, O'Brien RJ, Worley P. Narp and NP1 form heterocomplexes that function in developmental and activity-dependent synaptic plasticity. **Neuron** 2003; 39(3), 513-28. *equal contribution.

PATENTS AND PUBLISHED PATENT APPLICATIONS

- Hopf, C.; Drewes, G. und Ruffner, H. Treatment of neurodegenerative diseases by the use of ATP7A modulators. WIPO Patent Application WO/2005/075632.
- Hopf, C. und Drewes, G. Use of Eph receptor inhibitors for the treatment of neurodegenerative diseases- EP Patent 1,662,259, 2006

- Drewes, G., Kuester, B.; Kruse, U.; Hopf, C., Eberhard, D., Bantscheff, M., Reader, V., Raida, M. und Middlemiss, D. Process for the identification of novel enzyme interacting compounds- WO Patent 2,006,134,056, 2006
- Hopf, C., Drewes, G. und Ruffner, H. Treatment of Neurodegenerative Diseases by the Use of Degs Inhibitors. United States Patent Application 20070298029
- Drewes, G.; Hopf, C.; Neubauer, G. und Kruse, U. In vivo method for the evaluation of a compound-target interaction. United States Patent Application 20130210030

