

Prof. Dr.-Ing. Doris Segets

Date of Birth: December 20, 1982; female

University of Duisburg-Essen
Faculty of Engineering
Process Technology for Electrochemical Functional Materials
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Position: Professor (W3)

Academic Education

2008–2013 Doctorate Studies, Engineering, Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Germany, Supervisor: Prof. Dr. W. Peukert
2002–2008 Studies of Chemical and Biological Engineering, Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Germany

Scientific Degrees

2020 Habilitation (Mechanical Process Engineering), FAU
Topic: Nanoparticle processing: A scale-bridging approach for sustainable technologies
2013 PhD, Engineering, Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Germany, Supervisor: Prof. Dr. W. Peukert, Topic: Fundamental aspects during the processing of semiconductor nanoparticles
2008 Diplom, Chemical and Biological Engineering, Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Germany, Supervisor: Prof. Dr. W. Peukert, Topic: Charakterisierung des nasschemischen Syntheseprozesses von nanoskaligem Zinkoxid mittels linearer und nicht-linearer optischer Messmethoden

Post-graduate Career

2021 Professorship (W3), Chair for Particle Science and Technology, Department of Mechanical and Process Engineering, Faculty of Engineering, University of Duisburg-Essen, Germany
2021 Call for professorship (W3), Interface Engineering, Faculty 04, Stuttgart University, Germany; declined
2018-2021 Junior Professor (W1, with Tenure-track to W2), Process Technology for Electrochemical Functional Materials, Department of Mechanical and Process Engineering, Faculty of Engineering, University of Duisburg-Essen, Germany
2015–2018 Scientific Coordinator of Interdisciplinary Center for Functional Particle Systems (FPS), Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Germany
2013–2018 Head of Nanoparticle Processing Group, Institute of Particle Technology, Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Germany

Awards

2021	DECHEMA Prize 2020
2021	Gottschalk-Diederich-Baedecker-Prize for the successful transfer of research findings into industrial applications, G.D. Baedeker foundation, Essen
Since 2020	Member of the Young Academy of BBAW/Leopoldina, Germany
2016	Friedrich-Löffler-Prize for young scientists for outstanding contributions to the field of particle technology and product design, VDI-GVC, Germany
2015	Research Award, Alfred-Kärcher-Foundation, Germany
2015	Starting Grant of the Erlangen Cluster of Excellence "Engineering of Advanced Materials", FAU, Germany
2015	Max-Buchner Research Grant, Dechema, Germany
2013	PhD prize for young researchers of the Faculty of Engineering, FAU, Germany

Professional Activities

Since 2021	Member of the senate, UDE, Germany
Since 2019	Chairperson of the ProcessNet working group on "Interfacially dominated systems and processes", Germany
Since 2019	Member of the Advisory Board, Reaction Chemistry & Engineering, Royal Society of Chemistry (RSC)
Since 2018	Board Member, NanoEnergieTechnikZentrum (NETZ), UDE, Germany
Since 2017	Member of the Program Committee, DFG Priority Program (PP) 2045 "Highly specific and multidimensional fractionation of fine particles systems with technical relevance"
Since 2015	Member of the ProcessNet working party on "High-throughput research for materials, catalysts and formulation (AA-HDT)", Germany
2015–2018	Member of the Cluster of Excellence "Engineering of Advanced Materials" funded by the German Excellence Initiative, FAU, Germany
2015–2018	Women's representative of the Faculty of Engineering, FAU, Germany
2013–2015	Women's representative of the Department of Chemical and Biological Engineering, FAU, Germany

Review Activities

DFG, ERC, BMWi, Swiss National Science Foundation (SNSF), Volkswagen Stiftung

ACS Combinatorial Science, Advanced Powder Technology, Biochimica et Biophysica Acta, Catalysis Science and Technology, Chemical Engineering and Processing: Process Intensification, Chemical Engineering Journal, Chemical Engineering Science, Chemical Physics, Chemistry of Materials, CrystEngComm, Electrochimica Acta, Environmental Science and Technology, Journal of Alloys and Compounds, Journal of Colloid and Interface Science, Journal of Membrane Science, Langmuir, Materials Chemistry Frontiers, Materials Letters, Nanoscale, Optics Communications, Particuology, Physical Chemistry Chemical Physics, Separation and Purification Technology, and others

Reaction Chemistry & Engineering: Member of the advisory board since 06/2019

Publications

ORCID-ID: [0000-0003-3102-2934](https://orcid.org/0000-0003-3102-2934)

Scopus (accessed August 2021): 75 documents, > 1,300 citations, h-index 21

Articles which at the time of proposal submission have been published or officially accepted by publication outlets with scientific quality assurance, and book publications:

1. D. Siegmund, S. Metz, V. Peinecke, T.E. Warner, C. Cremers, A. Grevé, T. Smolinka, **D. Segets**, U.-P. Apfel, *Crossing the valley of death: From fundamental to applied research in electrolysis*. JACS Au, 2021, 1, 527-535, DOI: [10.1021/jacsau.1c00092](https://doi.org/10.1021/jacsau.1c00092).
2. S. Bapat, S.O. Kilian, H. Wiggers, **D. Segets**, *Towards a framework for evaluating and reporting Hansen solubility parameters: applications to particle dispersions*. Nanoscale Adv., 2021, DOI: [10.1039/D1NA00405K](https://doi.org/10.1039/D1NA00405K).
3. S. Bapat, **D. Segets**, *Sedimentation dynamics of colloidal formulations through direct visualization: Implications for fuel cell inks*. ACS Appl. Nano Mater. Nanomaterials, 2020, 3, 7384-7391, DOI: [10.1021/acsanm.0c01467](https://doi.org/10.1021/acsanm.0c01467).
4. M. Spinola, A. Keimer, **D. Segets**, G. Leugering, L. Pflug, *Model-based optimization of ripening processes with feedback modules*. Chem. Eng. Technol., 2020, 43, 896-903, DOI: [10.1002/ceat.201900515](https://doi.org/10.1002/ceat.201900515).
5. A.S. Mahmoud, **D. Segets**, *Cleaning Matters!* ACS Comb. Sci., 2019, 21, 722-725, DOI: [10.1021/acscombsci.9b00122](https://doi.org/10.1021/acscombsci.9b00122).
6. A.M. Salaheldin, J. Walter, P. Herre, I. Levchuk, Y. Jabbari, J.M. Kolle, C.J. Brabec, W. Peukert, **D. Segets**, *Automated synthesis of quantum dot nanocrystals by hot injection: Mixing induced self-focusing*. Chem. Eng. J., 2017, 320, 232-243, DOI: [10.1016/j.cej.2017.02.154](https://doi.org/10.1016/j.cej.2017.02.154).
7. W. Lin, J. Schmidt, M. Mahler, T. Schindler, T. Unruh, B. Meyer, W. Peukert, **D. Segets**, *Influence of tail groups during functionalization of ZnO nanoparticles on binding enthalpies and photoluminescence*. Langmuir, 2017, 33, 13581-13589, DOI: [10.1021/acs.langmuir.7b03079](https://doi.org/10.1021/acs.langmuir.7b03079).
8. T. Schindler, M. Schmiele, T. Schmutzler, T. Kassar, **D. Segets**, W. Peukert, A. Radulescu, A. Kriele, R. Gilles, T. Unruh, *A combined SAXS/SANS study for the in situ characterization of ligand shells on small nanoparticles: The case of ZnO*. Langmuir, 2015, 31, 10130-10136, DOI: [10.1021/acs.langmuir.5b02198](https://doi.org/10.1021/acs.langmuir.5b02198).
9. **D. Segets**, M. Lucas, R.N. Klupp Taylor, M. Scheele, H. Zheng, A.P. Alivisatos, W. Peukert, *Determination of the quantum dot band gap dependence on particle size from optical absorbance and transmission electron microscopy measurements*. ACS Nano, 2012, 6, 9021-9032, DOI: [10.1021/nn303130d](https://doi.org/10.1021/nn303130d).
10. W. Peukert, **D. Segets**, L. Pflug, G. Leugering, *Unified design strategies for particulate products*. Advances in Chemical Engineering, 2015, 46, 1-81. DOI: [10.1016/bs.ache.2015.10.004](https://doi.org/10.1016/bs.ache.2015.10.004).