## Prof. Dr.-Ing. habil. Doris Segets

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Position: W3 Professor

### Scientific Degrees

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| 2020 | Habilitation (Mechanical Process Engineering), FAU<br>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,<br>Supervisor: Prof. Dr. W. Peukert, Topic: Charakterisierung des nasschemischen Syntheseprozesses von nanoskaligem Zinkoxid mittels linearer und nicht-linearer optischer Messmethoden |

### Post-graduate Career

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| Since 2021 | Full Professor (W3), Chair for Particle Science and Technology, Department of Mechanical and Process Engineering, Faculty of Engineering, University of Duisburg-Essen, Germany |
| 2021 | Call for W3 Professorship, Interface Engineering, Faculty of Engineering, Stuttgart University, 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

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| 2021 | Wolfgang-Finkelnburg-Prize of FAU (habilitation award of the faculty of engineering) |
| 2021 | Gottschalk-Diederich-Baedeker Prize 2021 for excellent science and technology transfer |
| 2021 | Dechema Prize 2020 |
| 2016 | Friedrich-Löffler-Prize for young scientists for outstanding contributions to the field of particle technology and product design, VDI-GVC, Germany |
| 2015 | Max-Buchner Research Grant, Dechema, Germany |
| 2013 | PhD prize for young researchers of the Faculty of Engineering, FAU, Germany |

**Professional Activities**

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| Since 2020 | Member of the Young Academy of BBAW/Leopoldina, Germany |
| Since 2019 | Chairperson of the ProcessNet working group on “Interfacially dominated systems and processes”, Germany |
| Since 2018 | Board Member, NanoEnergieTechnikZentrum (NETZ), UDE, Germany |
| Since 2017 | Member of the Programme Committee, DFG Priority Program (SPP) 2045 “Highly specific and multidimensional fractionation of fine particles systems with technical relevance” |

**Publications (Scopus ID: 27968139800, >1300 citations, h-index 22, assessed 10.12.21)**

1. J. Dienstbier, K.-M. Aigner, J. Rolfes, W. Peukert, **D. Segets**, L. Pflug, F. Liers, *Robust optimization in nanoparticle technology: A proof of principle by quantum dot growth in a residence time reactor*, Comp. Chem. Eng., in press.
2. 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 electrocatalysis*, JACS Au, **1**, 527 (2021).
3. Z. Fan, P.-p. Ji, J. Zhang, **D. Segets**, D.-R. Chen, S.-C. Chen, *Wavelet neural network modeling for the retention efficiency of sub-15 nm nanoparticles in ultrafiltration under small particle to pore diameter ratio*, J. Membrane Sci. **635**, 119503 (2021)
4. W. Lin, C. Greve, S. Härtner, K. Götz, J. Walter, M. Wu, S. Rechberger, E. Spiecker, S. Busch, T. Schmutzler, Y. Avadhut, M. Hartmann, T. Unruh, W. Peukert, **D. Segets**, *Unraveling complexity: A strategy for the characterization of anisotropic core multishell nanoparticles*, Part. Part. Sys. Char. **37**, 2000145 (2020)
5. E. Reinhardt, A.M. Salaheldin, M. Distaso, **D. Segets**, W. Peukert, *Rapid characterization and parameter space exploration of perovskites using an automated routine*, ACS Combinatorial Science, **22**, 6 (2020)
6. S. Süß, T. Sobisch, W. Peukert, D. Lerche, **D. Segets**, *Determination of Hansen parameters for particles: A standardized routine based on analytical centrifugation*, Adv. Powder Technol., **29**, 1550 (2018)
7. M. Haderlein, A. Güldenpfennig, **D. Segets**, W. Peukert, *A widely applicable tool for modeling precipitation processes*, Comp. Chem. Eng. **98**, 197 (2017)
8. M. Haderlein, **D. Segets**, M. Gröschel, L. Pflug, G. Leugering, W. Peukert, *FIMOR: An efficient simulation for ZnO quantum dot ripening applied to the optimization of nanoparticle synthesis*, Chem. Eng. J. **260**, 706 (2015)
9. W. Lin, J. Walter, A. Burger, H. Maid, A. Hirsch, W. Peukert, **D. Segets**, *A general approach to study the thermodynamics of ligand adsorption to colloidal surfaces demonstrated by means of catechols binding to zinc oxide quantum dots*, Chem. Mater. **27**, 358 (2015)
10. **D. Segets**, J. Gradl, R. Klupp Taylor, V. Vassilev, W. Peukert, *Analysis of optical absorbance spectra for the determination of ZnO nanoparticle size distribution, solubility and surface energy,* ACS Nano **3**, 1703 (2009)