

Alfons Schulte

Work Address

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PROFESSIONAL PREPARATION

Dipl. Phys., Condensed Matter Physics, Technical University Munich

- "Photoconductivity and Electrical Resistance in Neutron-Transmutation Doped Tellurium Single Crystals"

Dr. rer. nat. (summa cum laude), Condensed Matter Physics, TU Munich, (1985)

- "Hall effect and Magnetoconductivity in 3-Dimensional Amorphous Alloys"

APPOINTMENTS AND POSITIONS

- 1990 - present: Professor; Assoc. Prof. with tenure (1996 - 2004); Assist. Prof. (1990 - 96)
Department of Physics, University of Central Florida, Orlando
(with joint secondary appointment in College of Optics & Photonics – CREOL)
- 9/01 – 8/2002: Professor (on leave from UCF), Physik Department E13, TU München,
8/97 - 1/1998: Visiting Scholar, University of Illinois at Urbana-Champaign, Urbana
2/98 - 5/1998: Visiting Scholar, CNLS, Los Alamos National Laboratory, Los Alamos
1989 - 1990: Visiting Scientist (World Trade Fellowship)
Polymer Science Division, IBM Almaden Research Center, San Jose
- 1986 - 1988: Research Associate / Vis. Research Assist. Professor
Department of Physics, University of Illinois at Urbana-Champaign, Urbana
- 1980 - 1985: Research Assistant / Research Associate
Physik Department, Technische Universität München

PRODUCTS (most current ones related to field)

1. B.-J. Niebuur, A. Deyerling, N. Höfer, A. Schulte, C. M. Papadakis.. Cononsolvency of the responsive polymer poly(N-isopropylacrylamide) in water/methanol mixtures: a dynamic light scattering study of the effect of pressure on the collective dynamics. *Colloid and Polymer Science* (2022) 300:1269–1279. <https://doi.org/10.1007/s00396-022-04987-x>
2. S. Modak, A. Schulte, C. Sartel, V. Sallet, Y. Dumont, E Chikoidze, X. Xia, F. Ren, S. J. Pearton, A. Ruzin, D. M. Zhigunov, L. Chernyak. Impact of radiation and electron trapping on minority carrier transport in p-Ga₂O₃. *Appl. Phys. Lett.* 120, 233503 (2022). <https://doi.org/10.1063/5.0096950>
3. S. Modak, L. Chernyak, A. Schulte, C. Sartel, V. Sallet, Y. Dumont, E Chikoidze, X. Xia, F. Ren, S. J. Pearton, A. Ruzin, D. M. Zhigunov, S/ S. Kosolobov, V. P. Drachev. Variable temperature probing of minority carrier transport and optical properties in p-Ga₂O₃. *Appl. Phys. Lett. Mater.* **10**, 031106 (2022). <https://doi.org/10.1063/5.0086449>.
4. B.-J. Niebuur, L. Chiappisi, F. Jung, X. Zhang, A. Schulte, C. M. Papadakis. Nanoscale Disintegration Kinetics of Mesoglobules in Aqueous Poly(N-isopropylacryl-amide) Solutions Revealed by Small-Angle Neutron Scattering and Pressure Jumps. *RSC Nanoscale*, 13, 13421-13426 (2021) <https://doi.org/10.1039/d1nr02859f>
5. B.-J. Niebuur, W. Lohstroh, C.-H. Ko, M.-S. Appavou, A. Schulte, C. M. Papadakis. Pressure Dependence of Water Dynamics in Concentrated Aqueous Poly(N-isopropylacryl-amide) Solutions with a Methanol Cosolvent *Macromolecules* **54**, 4387–4400 (2021). <https://doi.org/10.1021/acs.macromol.1c00111>

Other significant products

1. B.-J. Niebuur, Futscher MH, Philipp M, Müller-Buschbaum P, Schulte A. The Role of Backbone Hydration of Poly(N-isopropyl acrylamide) Across the Volume Phase Transition Compared to its Monomer. *Sci Rep.* **7**, 17012: 1-10 (2017)

2. B.-J. Niebuur, L. Chiappisi, X. Zhang, F. Jung, A. Schulte, C. M. Papadakis. Kinetics of Mesoglobule Formation and Growth of Mesoglobules in Aqueous Poly(N-isopropyl-acrylamide) Solutions: Pressure Jumps at Low and High Pressure,” *Macromolecules*, 52, 6416 –6427 (2019).
<https://doi.org/10.1021/acs.macromol.9b00937>
3. S. Arora, J. Mauser, D. Chakrabarti, A. Schulte. Spatially resolved micro-absorption spectroscopy with a broadband source and confocal detection. *Opt. Comm.* 355, 533-537 (2015).
4. A. Schulte, Y. Guo. Laser Raman Spectroscopy. In: Vij DR., editor. *Handbook of Applied Solid State Spectroscopy* [Internet] Boston, MA: Springer; 2006. p.661-688. Available from:<https://doi.org/10.1007/0-387-37590-2> DOI: <https://doi.org/10.1007/0-387-37590-2>
5. D. Braunstein, A. Ansari, J. Berendzen, B. R. Cowen, K. Engeberg, H. Frauenfelder, M. K. Hong, P. Ormos, T. B. Sauke, R. Scholl, A. Schulte, S. G. Sligar, B. A. Springer, P. J. Steinbach, R. D. Young. Site-directed mutagenesis of carbonmonoxymyoglobin HisE7 -> Gly: The role of the distal histidine in CO binding. *Proc. Nat. Acad. Sci.* 85, 8497 - 8501 (1988).

Graduate teaching experience (last 7 years)

PHY 5606	Quantum Mechanics I	Fall 2016, 2017, 2018, 2019
PHY 6624	Quantum Mechanics II	Spring 2017, 2018, 2019, 2020

Graduate students mentored

Ph.D. advisor

Eric Rende	Physics Ph.D. program	2019 – current
Sang Hoon Park	Physics Ph.D.	2012
Silki Arora	Physics Ph.D.	2011
Yu Guo	Physics Ph.D.	2006

Member of dissertation committees (5 most recent completed)

Ruqayyah Shouk	Ph.D. Physics (2022)
Sushrut Modak	Ph.D. Physics (2022)
Sachit Shah	Ph.D. Materials Science and Engineering (2021)
Iliia Toli	Ph.D. Chemistry (2019)
Nabin Kandel	Ph.D. Physics (2019)

Graduate students mentored – member on thesis/dissertation committees over course of career > 40 (22 since 2010)

Other synergistic activities related to Graduate Education

- Developed novel experimental techniques for studies on soft condensed matter systems (e.g. two U.S. patents issued on micro-spectroscopic probes with graduate student Silki Arora as co-inventor)
- Provided global perspective for graduate education through collaborations with research groups at TU Munich, Germany. Hosted research visits of graduate students from TU Munich and facilitated research visits of UCF graduate students to TU Munich
- Served on Physics graduate admissions committee and graduate curriculum and standards committee
- Outstanding research impact as evidenced by a high number of citations (> 5200 total), publications and presentations
- August-Wilhelm Scheer Visiting Professor and member of TUM Institute for Advanced Study, Technical University Munich 2018