

Publikationsliste Dr. D.V. Szabó:

Wichtige Veröffentlichungen:

1. E. Bischoff, D.V. Szabó, W. Mader: Elektronenmikroskopische und mikroanalytische Untersuchungen von Korngrenzenphasen in SiAlON-Keramiken. *Mat.-wiss. u. Werkstofftech.* **21** (1990) 113 - 115.
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9. D. Vollath, D.V. Szabó: Nanocoated particles: a special type of ceramic powder. *NanoStructured Materials* **4** [8] (1994) 927 - 938. (Online N.A.)
10. D. Vollath, D.V. Szabó, R.D. Taylor, J. O. Willis, K. E. Sickafus: Synthesis and properties of nanocrystalline superparamagnetic γ -Fe₂O₃. *NanoStructured Materials* **6** [5-8] (1995) 941 - 944.
11. D. Vollath, D.V. Szabó: Synthesis and Morphology of Coated Nanoscaled Ceramic Powders. *J. Aerosol Sci.* **26** Suppl. 1 (1995) S863 - S864
12. D.V. Szabó, D. Vollath: Elektronenmikroskopische Untersuchungen von nanoskaligen superparamagnetischen γ -Fe₂O₃ Pulvern. *Optik* **100** Suppl.6 (1995) 67 (B1/20). (Online N.A.)
13. D. Vollath, D.V. Szabó, J.O. Willis: Synthesis and Magnetic Properties of Nanostructured Cr₂O₃. *Materials Letters* **29** (1996) 271-279.
14. D. Vollath, D.V. Szabó, J. Haußelt: Synthesis and Properties of Ceramic Nanoparticles and Nanocomposites. *J. Europ. Ceram. Soc.* **17** (1997) 1317-1324.
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17. D. Vollath, D.V. Szabó: Microwave Plasma Synthesis of Ceramic Nanopowders. *J. Aerosol Sci.* **28**, Suppl.1 (1997), S685-S688.
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21. D.V. Szabó, D. Vollath: Nanocomposites from Coated Nanoparticles. *Advanced Materials* **11** (1999) 1313-1316.
22. D. Vollath, D.V. Szabó: Coated Nanoparticles: A New Way to Improved Nanocomposites. *J. of Nanoparticle Research* **1** (1999) 235-242.
23. D. Vollath, D.V. Szabó: Nanoparticles from Compounds with Layered Structures. *Acta Mater.* **48** (2000) 953-967.
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25. D.V. Szabó, D. Vollath, W. Arnold: Microwave Plasma Synthesis of Nanoparticles- Application of Microwaves to produce New Materials. *Ceramic Transactions* **111** (2001) 217-224.
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29. D. Vollath, D.V. Szabó, S. Schlabach: Oxide / Polymer Nanocomposites as New Luminescent Materials. *J. Nanoparticle Research* **6** (2004) 181-191.
30. D. Vollath, D.V. Szabó: Synthesis and Properties of Nanocomposites. *Adv. Eng. Materials*, **6** [3] (2004) 117-127.
31. D. Vollath, F.D. Fischer, M. Hagelstein, D.V. Szabó: Phases and Phase Transformations in Nanocrystalline ZrO₂. *J. Nanoparticle Research* **8** (2006) 1003-1016.
32. D. Vollath, D.V. Szabó: The Microwave Plasma Process – A Versatile Process to synthesize Nanoparticulate Materials. *J. Nanoparticle Research* **8** (2006) 417-428.

33. S. Schlabach, D.V. Szabó, D. Vollath, P. de la Presa, M. Forker: Structure and grain growth of TiO₂ nanoparticles investigated by electron and X-Ray diffractions and ¹⁸¹Ta perturbed angular correlations. *J. Appl. Phys.* **100** (2006) 024305.
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35. S. Schlabach, D.V. Szabó, D. Vollath, P. de la Presa, M. Forker: Zirconia and Titania Nanoparticles Studied by Electric Hyperfine Interactions, XRD, and TEM. *J. Alloys and Compounds* **434-435** (2007) 590-593.
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39. M. Forker, P. de la Presa, W. Hoffbauer, S. Schlabach, M. Bruns, D.V. Szabó: Structure, phase transformations, and defects of HfO₂ and ZrO₂ nanoparticles studied by ¹⁸¹Ta and ¹¹¹Cd perturbed angular correlations, ¹H magic-angle spinning NMR, XPS, and X-ray and electron diffraction. *Phys. Rev. B* **77** (2008) 054108.
40. M. Sagmeister, U. Brossmann, E.J.W. List, R. Ochs, D.V. Szabó. R. Würschum: In-Situ dispersion of ZrO₂ nanoparticles coated with Pentacene. *Physica Status Solidi (RRL)* **2** (2008) 203-205.
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43. M. Fuchs, D. Breitenstein, M. Fartmann, T. Grehl, S. Kayser, R. Koester, R. Ochs, S. Schlabach, D.V. Szabó, M. Bruns: Characterization of core/shell nanoparticle thin films for gas-analytical applications. *Surface and Interface Analysis* DOI 10.1002/sia.3223.

Buchbeiträge und Monographien:

1. D.V. Szabó, D. Vollath: Nanopulver und Nanocomposite: Grundlegende Betrachtungen und Anwendungsperspektiven. DKG-Handbuch „Technische Keramische Werkstoffe“ 59. Ergänzungslieferung, Kapitel 4.4.3.3., Sept. 2000
2. D. Vollath, D.V. Szabó: *Synthesis of Nanopowders by the Microwave Plasma Process- Basic Considerations and Perspectives for Up Scaling*. Book contribution in „Innovative Processing of Films and Nanocrystalline Powders“, edited by K.-L. Choy, Imperial College Press, ISBN 1-86094-316-0, S.220-251 (2002).
3. D. Vollath, D.V. Szabó, *Microwave plasma synthesis of ceramic powders*, in M. Willert-Porada (ed.), *Advances in Microwave and Radio Frequency Processing*. Springer Verlag Berlin, Heidelberg, ISBN 978-3-540-43252-4 pp. 619-626 (2006).
4. D.V. Szabó, *Synthesis of nanoscaled powders for applications in Microsystem Technology*, in H.-J. Ritzhaupt-Kleissl, Per Johander (eds.), *Ceramics Processing in Micro Technology*, Whittles Publishing, Dunbeath, UK, ISBN 978-1904445-84-5 (2009) pp. 67-84.
5. D. Vollath, D.V. Szabó, *Properties of bulk nanostructured materials*, in M. Zehetbauer, Y.T. Zhu (eds.), *Bulk Nanostructured Materials*, Wiley-VCH, Weinheim, Germany, ISBN 978-3-527-31524-6 (2009).

Vorträge, Konferenzbeiträge, Workshops und eingeladene Vorträge

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5. D.V. Szabó: Mikrowellenplasmasynthese nanoskaliger keramischer Pulver. **Seminarvortrag** an der Universität Bonn, im Rahmen des SFB 408 "Anorganische Festkörper ohne Translationsasymmetrie", 6.11. 1995.
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8. D.V. Szabó: Synthesis and Structure of Ceramic Nanoparticles. **Eingeladener Vortrag**, German - Chinese Workshop on Fundamentals of Nanometer-scale Structuring, Application of Scanning Probe Microscopy and Self-Organization Processes, Forschungszentrum Karlsruhe, 28 - 31.7.1997.
9. D.V. Szabó, D. Vollath: Characterisation of Coated Ceramic Nanoparticles by HREM. **Eingeladener Vortrag** beim ESF-NANO Workshop on High Resolution Electron Microscopy of Nanoparticles, Espoo, Finnland, 12.-13.9.1997.
10. D.V. Szabó, D. Vollath: Morphological Characterisation of Nanocrystals with Layered Structure. Poster bei der 6th International Conference of Nanostructured Materials, Stockholm, 14. -19.6.1998.
11. D.V. Szabó, D. Vollath: Crystallization of Nanoscaled Tungsten Oxide Powder particles. Vortrag bei 14th International Conference on Electron Microscopy, Cancun, Mexico, 31.8.-4.9.1998.
12. D.V. Szabó: The Microwave Plasma Process for the Production of Nanoparticles – Background and Experience. **Eingeladener Vortrag** beim ESF-NANO Workshop on High Temperature Generated Nano-Particles and Computational Fluid Dynamics, Lyngby, Denmark, 16.-17.7.1999.
13. D.V. Szabó, D. Vollath: Coated Nanoparticles: A New Route to Improved Nanocomposites. Vortrag bei der EUROMAT 99, München, 27.-30.9.1999.
14. D.V. Szabó, D. Vollath: Microwave Plasma Synthesis of Nanoparticles: Application of Microwaves to Produce New Materials, 2nd World Congress on Microwaves and Radio Frequency Processing, Orlando (FL) / USA, 2.-6.4.2000.

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16. D.V. Szabó: Keramische Nanocomposite: Grundlegende Betrachtungen und Anwendungsmöglichkeiten. **Seminarvortrag** Universität Stuttgart, 23.1.2001.
17. D.V. Szabó, I. Lamparth, D. Vollath: Complex high frequency properties of ceramic-polymer nanocomposites: comparison of fluoropolymers and acrylic based compounds. 5th Austrian Polymer Meeting, Leoben, 12-14.9.2001.
18. D.V. Szabó: Warum sind Nanoteilchen so interessant? **IMTEK-Seminarvortrag**, Universität Freiburg, 3.12.2001.
19. D.V. Szabó, S. Schlabach, B. Xu, D. Vollath: Modifying the surface of Nanoparticles by Coating. **Eingeladener Vortrag** bei TMS 2002, Seattle, 15.-18.2.2002.
20. D.V. Szabó: Herstellung, Eigenschaften und Anwendungsmöglichkeiten von Nanopulvern. **Eingeladener Vortrag** bei beim Workshop „Innovationen mit Nanopulvern“, Deutschlandsberg (A), 24.9.2003.
21. D.V. Szabó, S. Schlabach, H. Reuter, D. Vollath: Luminescent Nanocomposite based on oxide nanoparticles. **Eingeladener Vortrag** bei „NanoFair 2003“, Dresden, 20.-21.11.2003.
22. D.V. Szabó: Faszination NANO: Nanocomposite mit besonderen Eigenschaften. (**eingeladen**) BASF, Ludwigshafen, 13.Januar 2004
23. D.V. Szabó, S. Schlabach, H. Reuter, D. Vollath: Luminescence Mechanism in Organic coated Oxide Nanoparticles. Vortrag bei “Nano2004”, Wiesbaden, 20.-24.06.2004.
24. D.V. Szabó, H. Reuter, S. Schlabach, D. Vollath: Influence of Halides on the Luminescence of Oxide/Anthracene/Polymer Nanocomposites. Symposium DD, Paper DD7.11 (Vortrag), MRS Fall Meeting, Boston, Mass., November 28-December 3, 2004, Materials Research Society, 2004
25. D.V. Szabó: Think Small – Fascinating World of Nanomaterials. **Eingeladener Vortrag** (Seminar), The University of North Dakota, Fargo, 6.12.2004.
26. D.V. Szabó: Synthesis, Structure and Physical Properties of Nanoparticles and Nanocomposite Particles. **Eingeladener Vortrag** (Seminar), The University of Pennsylvania, Philadelphia, 8.12.2004.
27. D.V. Szabó: Microwaves and Nanoparticles: Synthesis, Structure and Properties of Nanoparticles and Nanocomposite Particles. **Seminar**, Tianjin University of Technology, Institute of Materials Physics, (CHN) 18.01.2005.
28. D.V. Szabó: Microwaves and Nanoparticles: Synthesis, Structure and Properties of Nanoparticles and Nanocomposite Particles. **Seminar**, Nanotechnology Industrialisation Base of China, Tianjin, (CHN) 19.01.2005.
29. D.V. Szabó: Functional Nanocomposites. US-German Workshop on Nanotechnology “Young Researchers”, Karlsruhe, 14.03.2005.

30. D.V. Szabó, S. Schlabach, C. Lellig, B. Schumacher, D. Vollath: Nanopartikel mit hohem Anwendungs- und Wertschöpfungspotential: Möglichkeiten des Karlsruher Mikrowellen Plasma Prozesses. NanoMat 6. Szene. 7.-8.04.2005, Karlsruhe.
31. B. Schumacher, D.V. Szabó, S. Schlabach, R. Ochs, H. Müller, M. Bruns: Nanoparticle SnO₂ films as gas sensitive membranes. MRS Fall-meeting, Boston, 27.11.-01.12.2005.
32. D.V. Szabó, S. Schlabach, R. Ochs: Nicht-Thermische Plasmaverfahren für die Synthese von Nanopartikeln. DKG-Symposium, Erlangen, 28.-29.11.2006.
33. D.V. Szabó, S. Schlabach, R. Ochs: Analytical TEM-Investigation of Size Effects in SnO₂ Nanoparticles Produced by Microwave Plasma Synthesis. Microscopy Conference 2007, Saarbrücken, 2.-7.9.2007.
34. D.V. Szabó, R. Ochs, S. Schlabach, E. Ritzhaupt-Kleissl, T. Hanemann: New Core/Shell Ta₂O₅-PMMA Nanocomposites for Applications as Polymer Waveguides. MRS Fall Meeting 2007, Boston, 26.-30.11.2007.
35. D.V. Szabó, R. Ochs, S. Schlabach: Properties and Application Potential of Nanoparticles produced by a Non-Equilibrium Plasma. 35th ICOPS (International Conference on Plasma Science), Karlsruhe, Germany, 15.-19.06.2008.
36. D.V. Szabó: Microwave Plasma Processing of Nanomaterials. **Eingeladener Vortrag** bei Minicourse „Microwave Processing of Materials“, 19.-20.06.2008, 35th ICOPS, Karlsruhe, Germany.
37. D.V. Szabó: Klein- aber Fein: Mikrowellen für Nanopartikel. **Eingeladener Vortrag** (Seminar) an der TU Graz (A), Institut für Materialphysik, 20.06.2008.
38. D.V. Szabó: Nanocomposites for micro-optical devices. **Lecture**, Tianjin-University of Technology, (China) 29.10.2008.
39. D.V. Szabó: Preparation, characterization and physical properties of nanomaterials and nanocomposites. **Lecture**, Tianjin-University of Technology, (China) 30.10.2008.
40. D.V. Szabó: Karlsruhe Microwave Plasma Process for nanocomposite preparation. **Lecture**, Tianjin-University of Technology, (China) 31.10.2008.
41. D.V. Szabó: Karlsruhe Microwave Plasma Process and equipment for nanocomposite preparation. **Seminar**, Nanotechnology Industrialization Base of China, Tangu, Tianjin (China), 04.11.2008.
42. D.V. Szabó: Nanomaterialien: Faszinierendes aus der Zwergenwelt, **Lecture** an der FH Wels (A), Fakultät für Technik und Umweltwissenschaften, 23.04.2009
43. D.V. Szabó, R. Ochs, S. Schlabach, M. Fuchs, M. Bruns: How Microwaves can contribute to Nanotechnology“ AMPERE2009, Karlsruhe, Germany, 07.09.-10.09.2009
44. D.V. Szabó, S. Schlabach, R. Ochs, T. Hanemann: Reducing the agglomerate size in nanoparticle/polymer nanocomposites. 14th European Conference on Composite Materials (ECCM14), Budapest, Hungary, 07.06.-10.06.2010.

organisierte Tagungen / Session Chairs

1. D.V. Szabó: Scientific Secretary für den „Second European Workshop on Processing of Materials“ am Forschungszentrum Karlsruhe vom 10 - 12.6.1997.
2. D.V. Szabó: Organisation des ESF-NANO Workshops „High Temperature Sampling and In-Situ Measurement of Nanoparticles“ am Forschungszentrum Karlsruhe vom 21.-22.5.1999.
3. D.V. Szabó: Organisation des Symposiums „Nanomaterials – From Science to Industrial Application, am Forschungszentrum Karlsruhe, 26.11.2003.
4. D.V. Szabó: Session Chair der Session „Nonequilibrium Plasma Applications II“ bei ICOPS 2008, 15-19.6.2008, Karlsruhe
5. D.V. Szabó, Local Organizing Committee of 12th AMPERE Conference, Karlsruhe, 4.-7.09.2009.