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## Publikationen

### Three-dimensional distribution of individual atoms in the channels of beryl

Knez, D., Gspan, C., Simic, N., Mitsche, S., Fitzek, H., Gatterer, K., Wiltsche, H., Kothleitner, G., Grogger, W. & Hofer, F., Dez. 2024, in: Communications Materials. 5, 1, 9 S., 19.

### ZnIn<sub>2</sub>S<sub>4</sub> thin films with hierarchical porosity for photocatalysis

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### Emergence of Interfacial Magnetism in Strongly-Correlated Nickelate-Titanate Superlattices

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### Phase Transitions and Ion Transport in Lithium Iron Phosphate by Atomic-Scale Analysis to Elucidate Insertion and Extraction Processes in Li-Ion Batteries

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### All van der Waals Semiconducting PtSe<sub>2</sub> Field Effect Transistors with Low Contact Resistance Graphite Electrodes

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### Atom by atom analysis of defect structures in doped STO

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### Atom by Atom analysis of defect structures in doped STO

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**Challenges and advances regarding LiVPO<sub>4</sub>: From HR-STEM & EELS to novel scanning diffraction techniques**  
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**Pulsed Laser Deposition using high-power Nd:YAG laser source operating at its first harmonics: recent approaches and advances**

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**Visualizing cellulose chains with cryo scanning transmission electron microscopy**

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Thaler, P., Volk, A., Lackner, F., Steurer, J., Knez, D., Grogger, W., Hofer, F. & Ernst, W. E., 23 Okt. 2014, in: *Physical Review B*. 90, 15, 155442.

### **HR-STEM investigations of metallic nanoparticles grown with superfluid He-droplets**

Knez, D., Thaler, P., Volk, A., Grogger, W., Ernst, W. & Hofer, F., 24 Sept. 2014.

### **HR-STEM investigations of metallic nanoparticles grown with superfluid He-droplets**

Knez, D., Volk, A., Thaler, P., Fisslthaler, E., Grogger, W., Ernst, W. & Hofer, F., 7 Sept. 2014.

### **HR-STEM investigations of metallic nanoparticles grown with superfluid He-droplets**

Knez, D., Volk, A., Thaler, P., Fisslthaler, E., Grogger, W., Ernst, W. & Hofer, F., 8 Mai 2014.

### **Formation of mono- and bi-metallic nanowires in vortices in superfluid He nanodroplets**

Thaler, P., Volk, A., Lackner, F., Steurer, J., Knez, D., Grogger, W., Hofer, F. & Ernst, W., 2014, *64. Jahrestagung der Österreichischen Physikalischen Gesellschaft / Echophysics-Pöllau.* ., S. 11-11

### **HR-STEM investigations of metallic nanoparticles grown with superfluid He-droplets**

Knez, D., Volk, A., Fisslthaler, E., Grogger, W. & Ernst, W., 2014.

### **HR-STEM investigations of metallic nanoparticles grown with superfluid He-droplets**

Knez, D., Volk, A., Thaler, P., Fisslthaler, E., Grogger, W., Ernst, W. & Hofer, F., 2014, *International Microscopy Congress.* ., S. MS-1-O-2269

### **HR-STEM investigations of metallic nanoparticles grown with superfluid He-droplets**

Knez, D., Volk, A., Thaler, P., Fisslthaler, E., Grogger, W., Ernst, W. & Hofer, F., 2014, *European Workshop on Spatially-Resolved Electron Spectroscopy.* ., S. 23-23

### **HR-STEM investigations of metallic nanoparticles grown with superfluid He-droplets**

Knez, D., Thaler, P., Volk, A., Grogger, W., Ernst, W. & Hofer, F., 2014, *64. Jahrestagung der Österreichischen Physikalischen Gesellschaft / Echophysics-Pöllau.* ., S. 11-11

### **Preparation and Electron Microscopy of Graphene**

Knez, D., Fisslthaler, E. & Hofer, F., 25 Apr. 2013.

### **Preparation and Electron Microscopy of Graphene**

Knez, D., 2013

## **Aktivitäten**

### **Zink indium sulfides with hierarchical porosity for photocatalysis**

Trimmel, G. (Redner/in), Sigl, M. (Beitragende/r), Egger, M. S. (Beitragende/r), Warchomicka, F. G. (Beitragende/r), Knez, D. (Beitragende/r), Dienstleider, M. (Beitragende/r), Amenitsch, H. (Beitragende/r) & Rath, T. (Redner/in)  
4 März 2025

### **Specimen thickness determination in the TEM: Using 4DSTEM and Neural Networks to solve a persistent problem**

Knez, D. (Redner/in)

25 Okt. 2024

**A Synchrotron in a Microscope: Material characterization on the atomic level**

Knez, D. (Redner/in)

16 Okt. 2024

**Interface Stability of Organic Solar Cells- Interactions of fluorinated absorber materials with electron and hole transport layers**

Hönigsberger, J. (Redner/in), Zuccala, E. (Beitragende/r), Rath, T. (Beitragende/r), Knez, D. (Beitragende/r), Haberfehlner, G. (Beitragende/r), Griesser, T. (Beitragende/r), Barozzi, M. (Beitragende/r), Canteri, R. (Beitragende/r) &amp; Trimmel, G. (Beitragende/r)

23 Sept. 2024

**Interface Stability of Organic Solar Cells- Interactions of fluorinated absorber materials with electron and hole transport layers**

Hönigsberger, J. (Redner/in), Zuccala, E. (Beitragende/r), Rath, T. (Beitragende/r), Knez, D. (Beitragende/r), Haberfehlner, G. (Beitragende/r), Griesser, T. (Beitragende/r), Barozzi, M. (Beitragende/r), Canteri, R. (Beitragende/r) &amp; Trimmel, G. (Beitragende/r)

26 Aug. 2024

**Quantitative Analysis of Individual Atoms in the Channels of Beryl**

Knez, D. (Redner/in)

4 Apr. 2024 → 5 Apr. 2024

**Visualizing cellulose chains with cryo scanning transmission electron microscopy**

Knez, D. (Redner/in)

4 Apr. 2024 → 5 Apr. 2024

**Field induced oxygen vacancy migration in anatase thin films**

Knez, D. (Redner/in)

3 Sept. 2023 → 7 Sept. 2023

**Quantitative Analysis of Individual Atoms in the Channels of Beryl**

Knez, D. (Redner/in)

3 Sept. 2023 → 7 Sept. 2023

**Combining Energy Harvesting and Storage Into a Single Device**

Zuccala, E. (Redner/in), Jodlbauer, A. (Beitragende/r), Haberfehlner, G. (Beitragende/r), Knez, D. (Beitragende/r), Rath, T. (Beitragende/r), Hanzu, I. (Beitragende/r) &amp; Trimmel, G. (Beitragende/r)

13 Apr. 2023

**Microscopy Conference 2023**

Knez, D. (Teilnehmer/-in)

26 Feb. 2023 → 2 März 2023

**Visualizing cellulose chains with cryo scanning transmission electron microscopy**

Knez, D. (Redner/in)

23 Feb. 2023 → 2 März 2023

**Phase Transitions on Alloying of Mixed-Metallic Nanoparticles**

Ernst, W. (Redner/in), Lackner, F. (Beitragende/r), Knez, D. (Beitragende/r), Hofer, F. (Beitragende/r) &amp; Hauser, A. (Beitragende/r)

26 Sept. 2022 → 30 Sept. 2022

**Synthesis and investigation of sub-10 nm metal-semiconductor particles with core-shell and core-multi-shell structure**

Lackner, F. (Redner/in), Messner, R. (Beitragende/r), Küstner, F. (Beitragende/r), Sullmann, L. (Beitragende/r), Knez, D. (Beitragende/r), Hofer, F. (Beitragende/r), Kothleitner, G. (Beitragende/r) &amp; Ernst, W. (Beitragende/r)

26 Sept. 2022 → 30 Sept. 2022

**Challenges in the characterization of magnetic materials with DPC**

Knez, D. (Redner/in)

25 Sept. 2022 → 27 Sept. 2022

**Mixed-metallic Nanoparticles: Phase Transitions and Diffusion in Au-VO Clusters**

Ernst, W. (Redner/in), Lasserus, M. I. (Beitragende/r), Knez, D. (Beitragende/r), Hofer, F. (Beitragende/r) & Hauser, A. (Beitragende/r)

21 Sept. 2022 → 23 Sept. 2022

**Challenges in the characterization of complex nanomaterials with analytical STEM**

Knez, D. (Redner/in)

4 Sept. 2022 → 9 Sept. 2022

**Mixed metal clusters - core-shell structures, phase transitions, and nano alloying**

Ernst, W. (Redner/in), Hauser, A. (Beitragende/r), Lackner, F. (Beitragende/r), Knez, D. (Beitragende/r) & Hofer, F. (Beitragende/r)

6 Juni 2022 → 10 Juni 2022

**Photoemission Electron Microscopy of Plasmonic Nanoparticles and Nanostructures**

Lackner, F. (Redner/in), Jauk, T. (Beitragende/r), Schiffmann, A. (Beitragende/r), Komatsu, K. (Beitragende/r), Ditlbacher, H. (Beitragende/r), Krenn, J. R. (Beitragende/r), Papa, Z. (Beitragende/r), Dombi, P. (Beitragende/r), Fitzek, H. M. (Beitragende/r), Knez, D. (Beitragende/r), Hofer, F. (Beitragende/r), Denker, C. (Beitragende/r), Walowski, J. (Beitragende/r), Münzenberg, M. (Beitragende/r), Sterrer, M. (Beitragende/r), Schultze, M. (Beitragende/r) & Ernst, W. (Beitragende/r)

25 Okt. 2021

**3D Nano-Printing of Plasmonically Active Gold-Nanoantennas**

Kuhness, D. (Redner/in), Knez, D. (Beitragende/r), Haberfehlner, G. (Beitragende/r), Gruber, A. (Beitragende/r), Fitzek, H. M. (Redner/in), Winkler, R. (Beitragende/r), Kothleitner, G. (Redner/in) & Plank, H. (Beitragende/r)

27 Sept. 2021

**Post-processing procedure for orbital mapping of rutile by STEM-EELS**

Oberaigner, M. (Redner/in), Knez, D. (Redner/in), Löffler, S. (Redner/in) & Kothleitner, G. (Redner/in)

22 Aug. 2021 → 26 Aug. 2021

**Structure of Periodic Oxygen Vacancy Arrays in Anatase Thin Films**

Knez, D. (Redner/in)

20 Nov. 2020 → 26 Nov. 2020

**Attosecond Spectroscopy of Ultrafast Carrier Dynamics in Nanoparticles**

Lackner, F. (Redner/in), Gessner, J. A. (Beitragende/r), Siegrist, F. (Beitragende/r), Schiffmann, A. (Beitragende/r), Messner, R. (Beitragende/r), Lasserus, M. I. (Beitragende/r), Schnedlitz, M. (Beitragende/r), Toulson, B. W. (Beitragende/r), Knez, D. (Beitragende/r), Hofer, F. (Beitragende/r), Gessner, O. (Beitragende/r), Ernst, W. (Beitragende/r) & Schultze, M. (Beitragende/r)

16 Nov. 2020 → 19 Nov. 2020

**Atoms in Motion: Electron Beam Induced Dynamics in Experiment and Simulation**

Knez, D. (Redner/in)

12 Dez. 2019

**Atoms in Motion: On the Impact of Swift Electrons on Mass Transport Phenomena at the Nanoscale**

Knez, D. (Redner/in)

28 Juni 2019

**Nanomaterials Synthesized in Helium Droplets**

Ernst, W. (Beitragende/r), Hauser, A. (Redner/in), Lackner, F. (Beitragende/r), Knez, D. (Beitragende/r) & Hofer, F. (Beitragende/r)

30 Mai 2019 → 1 Juni 2019

**Towards new plasmonic materials: Synthesis of K and K-Au nanoparticles with helium nanodroplets**

Messner, R. (Redner/in), Knez, D. (Beitragende/r), Hofer, F. (Beitragende/r), Ernst, W. E. (Beitragende/r) & Lackner, F. (Beitragende/r)

19 Mai 2019 → 22 Mai 2019

**On the Unexpected Alloying Behaviour of Ni-Au and Co-Au Core-Shell Nanoparticles**

Hauser, A. (Redner/in), Schnedlitz, M. (Beitragende/r), Lasserus, M. I. (Beitragende/r), Meyer, R. (Beitragende/r), Ernst, W. E. (Beitragende/r), Knez, D. (Beitragende/r), Hofer, F. (Beitragende/r), Fernandez-Perea, R. (Beitragende/r) & De Lara-Castells, M. P. (Beitragende/r)

3 Dez. 2018 → 5 Dez. 2018

**Electron beam induced dynamics of atoms and clusters**

Hofer, F. (Redner/in), Knez, D. (Beitragende/r), Haberfehlner, G. (Beitragende/r), Kothleitner, G. (Beitragende/r), Ernst, W. E. (Beitragende/r) & Midgley, P. (Beitragende/r)

16 Okt. 2018

**Core-Shell Nanoparticles for Plasmonics and Catalysis**

Schiffmann, A. (Beitragende/r), Schnedlitz, M. (Beitragende/r), Lasserus, M. I. (Beitragende/r), Messner, R. (Beitragende/r), Lackner, F. (Beitragende/r), Hauser, A. (Beitragende/r), Knez, D. (Beitragende/r), Hofer, F. (Beitragende/r) & Ernst, W. E. (Redner/in)

15 Okt. 2018 → 17 Okt. 2018

**Helium droplet synthesis as a new route to plasmonic nanoparticles and nanostructures**

Lackner, F. (Redner/in), Schiffmann, A. (Beitragende/r), Messner, R. (Beitragende/r), Lasserus, M. I. (Beitragende/r), Schnedlitz, M. (Beitragende/r), Fitzek, H. M. (Beitragende/r), Pölt, P. (Beitragende/r), Knez, D. (Beitragende/r), Kothleitner, G. (Beitragende/r) & Ernst, W. E. (Beitragende/r)

12 Okt. 2018

**Core-shell nanoparticles prepared in superfluid helium droplets: structure, phase transitions, and alloy formation**

Schiffmann, A. (Beitragende/r), Schnedlitz, M. (Beitragende/r), Lasserus, M. I. (Beitragende/r), Messner, R. (Beitragende/r), Lackner, F. (Beitragende/r), Meyer, R. (Beitragende/r), Hauser, A. (Beitragende/r), Knez, D. (Beitragende/r), Hofer, F. (Beitragende/r) & Ernst, W. E. (Redner/in)

8 Okt. 2018 → 12 Okt. 2018

**Helium Nanodroplet Based Synthesis of Tailored Nanoparticles for Surface Enhanced Raman Spectroscopy**

Lackner, F. (Redner/in), Schiffmann, A. (Beitragende/r), Lasserus, M. I. (Beitragende/r), Messner, R. (Beitragende/r), Schnedlitz, M. (Beitragende/r), Fitzek, H. M. (Beitragende/r), Pölt, P. (Beitragende/r), Knez, D. (Beitragende/r), Hofer, F. (Beitragende/r) & Ernst, W. E. (Beitragende/r)

11 Sept. 2018

**Plasmon spectroscopy of metallic nanoparticles on ultra-thin h-BN films**

Schiffmann, A. (Redner/in), Knez, D. (Beitragende/r), Lackner, F. (Beitragende/r), Lasserus, M. I. (Beitragende/r), Messner, R. (Beitragende/r), Schnedlitz, M. (Beitragende/r), Hofer, F. (Beitragende/r) & Ernst, W. E. (Beitragende/r)

11 Sept. 2018

**Thermally induced alloying process in core@shell AgAu particles: A new method to measure diffusion on the nanoscale**

Lasserus, M. I. (Redner/in), Schnedlitz, M. (Beitragende/r), Hauser, A. (Beitragende/r), Knez, D. (Beitragende/r), Messner, R. (Beitragende/r), Schiffmann, A. (Beitragende/r), Lackner, F. (Beitragende/r), Hofer, F. (Beitragende/r) & Ernst, W. E. (Beitragende/r)

11 Sept. 2018

**To be or not to be alloyed: The unexpected behaviour of Ni-Au and Co-Au core-shell nanoparticles upon heating**

Schnedlitz, M. (Redner/in), Knez, D. (Beitragende/r), Meyer, R. (Beitragende/r), Lasserus, M. I. (Beitragende/r), Messner, R. (Beitragende/r), Schiffmann, A. (Beitragende/r), Lackner, F. (Beitragende/r), Hauser, A. (Beitragende/r), Hofer, F. (Beitragende/r) & Ernst, W. E. (Beitragende/r)

11 Sept. 2018

**Atoms in Motion: Electron Beam Induced Dynamics in Experiment and Simulation**

Knez, D. (Redner/in)

9 Sept. 2018 → 14 Sept. 2018

**Functional plasmonic nanostructures obtained from helium droplet synthesis**

Lackner, F. (Redner/in), Schiffmann, A. (Beitragende/r), Lasserus, M. I. (Beitragende/r), Messner, R. (Beitragende/r), Schnedlitz, M. (Beitragende/r), Fitzek, H. M. (Beitragende/r), Pölt, P. (Beitragende/r), Knez, D. (Beitragende/r), Hofer, F. (Beitragende/r) & Ernst, W. E. (Beitragende/r)

30 Aug. 2018

**Ultra-thin h-BN films employed as STEM substrates for nanoscale plasmon spectroscopy**

Schiffmann, A. (Redner/in), Knez, D. (Beitragende/r), Lackner, F. (Beitragende/r), Lasserus, M. I. (Beitragende/r),

Messner, R. (Beitragende/r), Schnedlitz, M. (Beitragende/r), Hofer, F. (Beitragende/r) & Ernst, W. E. (Beitragende/r)

30 Aug. 2018

**Atoms in Motion: Electron Radiation Dynamics**

Knez, D. (Redner/in)

26 Apr. 2018 → 27 Apr. 2018

**Plasmonic Properties of Ag@Au core@shell Nanoparticles and Nanostructures Formed by Helium Droplet Synthesis**

Lackner, F. (Redner/in), Schiffmann, A. (Beitragende/r), Schnedlitz, M. (Beitragende/r), Lasserus, M. I. (Beitragende/r), Messner, R. (Beitragende/r), Ernst, W. E. (Beitragende/r), Fitzek, H. M. (Beitragende/r), Pölt, P. (Beitragende/r), Knez, D. (Beitragende/r) & Hofer, F. (Beitragende/r)

7 Feb. 2018

**Atoms in motion: electron beam induced dynamics of metallic clusters in experiment & simulation**

Knez, D. (Redner/in), Fisslthaler, E. (Beitragende/r), Hofer, F. (Beitragende/r), Schnedlitz, M. (Beitragende/r), Lasserus, M. I. (Beitragende/r), Schiffmann, A. (Beitragende/r) & Ernst, W. E. (Beitragende/r)

6 Feb. 2018

**Temperature studies of Ni@Au and Co@Au core@shell systems on the nanoscale**

Schiffmann, A. (Redner/in), Schnedlitz, M. (Beitragende/r), Meyer, R. (Beitragende/r), Lasserus, M. I. (Beitragende/r), Messner, R. (Beitragende/r), Lackner, F. (Beitragende/r), Hauser, A. (Beitragende/r), Ernst, W. E. (Beitragende/r), Knez, D. (Beitragende/r) & Hofer, F. (Beitragende/r)

6 Feb. 2018

**On the stability of Ag-Au and Ni-Au core-shell particles at elevated temperatures: diffusion, oxidation and structural inversion at atomic resolution**

Schnedlitz, M. (Redner/in), Lasserus, M. I. (Beitragende/r), Meyer, R. (Beitragende/r), Messner, R. (Beitragende/r), Schiffmann, A. (Beitragende/r), Lackner, F. (Beitragende/r), Ernst, W. E. (Beitragende/r), Hauser, A. (Beitragende/r),

Knez, D. (Beitragende/r) & Hofer, F. (Beitragende/r)

5 Feb. 2018

**Austrian Society for Electron Microscopy (Externe Organisation)**

Albu, M. (Mitglied), Fisslthaler, E. (Mitglied), Fitzek, H. M. (Mitglied), Grogger, W. (Mitglied), Haberfehlner, G. (Mitglied), Hofer, F. (Mitglied), Knez, D. (Mitglied), Kothleitner, G. (Mitglied), Krisper, R. (Mitglied), Lammer, J. (Mitglied), Letofsky-Papst, I. (Mitglied), Mayrhofer, C. (Mitglied), Mitsche, S. (Mitglied), Nachtnebel, M. (Mitglied), Plank, H. (Mitglied), Rattenberger, J. (Mitglied), Rauch, S. (Mitglied), Sattelkow, J. (Mitglied), Schrottner, H. (Mitglied), Trummer, C. (Mitglied), Wewerka, K. (Mitglied), Winkler, R. (Mitglied) & Zankel, A. (Mitglied)

2018 → ...

**Richard Drummond-Brydson**

Knez, D. (Gastgeber/in) & Hofer, F. (Gastgeber/in)  
29 Nov. 2017 → 1 Dez. 2017

**Direct Imaging of Channel Constituents in Beryl**

Hofer, F. (Redner/in), Gspan, C. (Beitragende/r), Knez, D. (Redner/in), Fitzek, H. M. (Beitragende/r), Grogger, W. (Beitragende/r) & Gatterer, K. (Beitragende/r)  
12 Nov. 2017 → 17 Nov. 2017

**In situ studies of high-purity mono- and bimetallic nanostructures in experiment and simulation**

Knez, D. (Redner/in)  
21 Aug. 2017 → 25 Aug. 2017

**Electron Beam Induced Dynamics of Atoms and Clusters-Experiments and Simulations**

Hofer, F. (Redner/in) & Knez, D. (Beitragende/r)  
30 Apr. 2017 → 4 Mai 2017

**The 16th European Microscopy Congress**

Knez, D. (Redner/in)  
28 Aug. 2016 → 2 Sept. 2016

**Materials Day 2015**

Knez, D. (Redner/in)  
28 Sept. 2015

**12th Multinational Conference on Microscopy 2015**

Knez, D. (Redner/in)  
8 Sept. 2015

**International Microscopy Congress 2014**

Knez, D. (Redner/in)  
7 Sept. 2014

**Auszeichnungen****Best Poster Award Instrumentation Session**

Knez, D. (Empfänger/-in), 28 Sept. 2017

**Best Young Lecturer Award**

Knez, D. (Empfänger/-in), 28 Aug. 2015

**Scholarship of the Società Italiana Scienze Microscopiche (SISM)**

Knez, D. (Empfänger/-in), Sept. 2019