



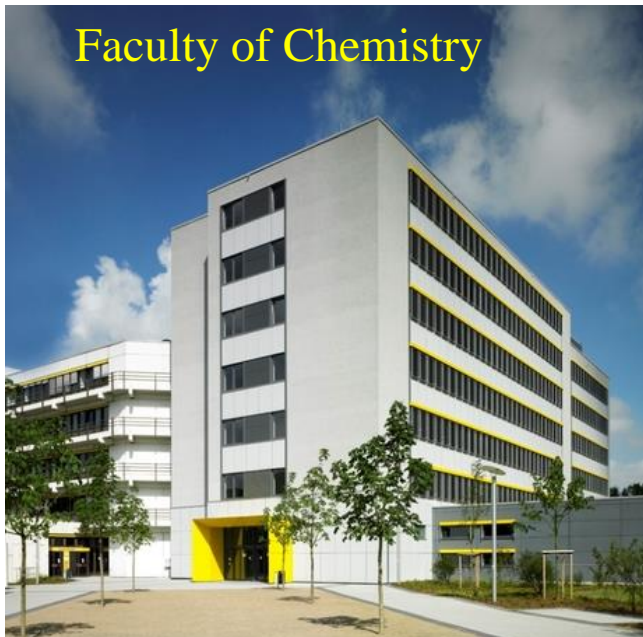
Prof. Dr. Matthias Epple

Dr. Oleg Prymak

**Inorganic Chemistry and Center for Nanointegration Duisburg-
Essen (CeNIDE), University of Duisburg-Essen
45117 Essen, Germany**

The University of Duisburg-Essen

Faculty of Chemistry



The University (2017):

- 42.802 students, 18% international
- 3.472 staff, 466 professors

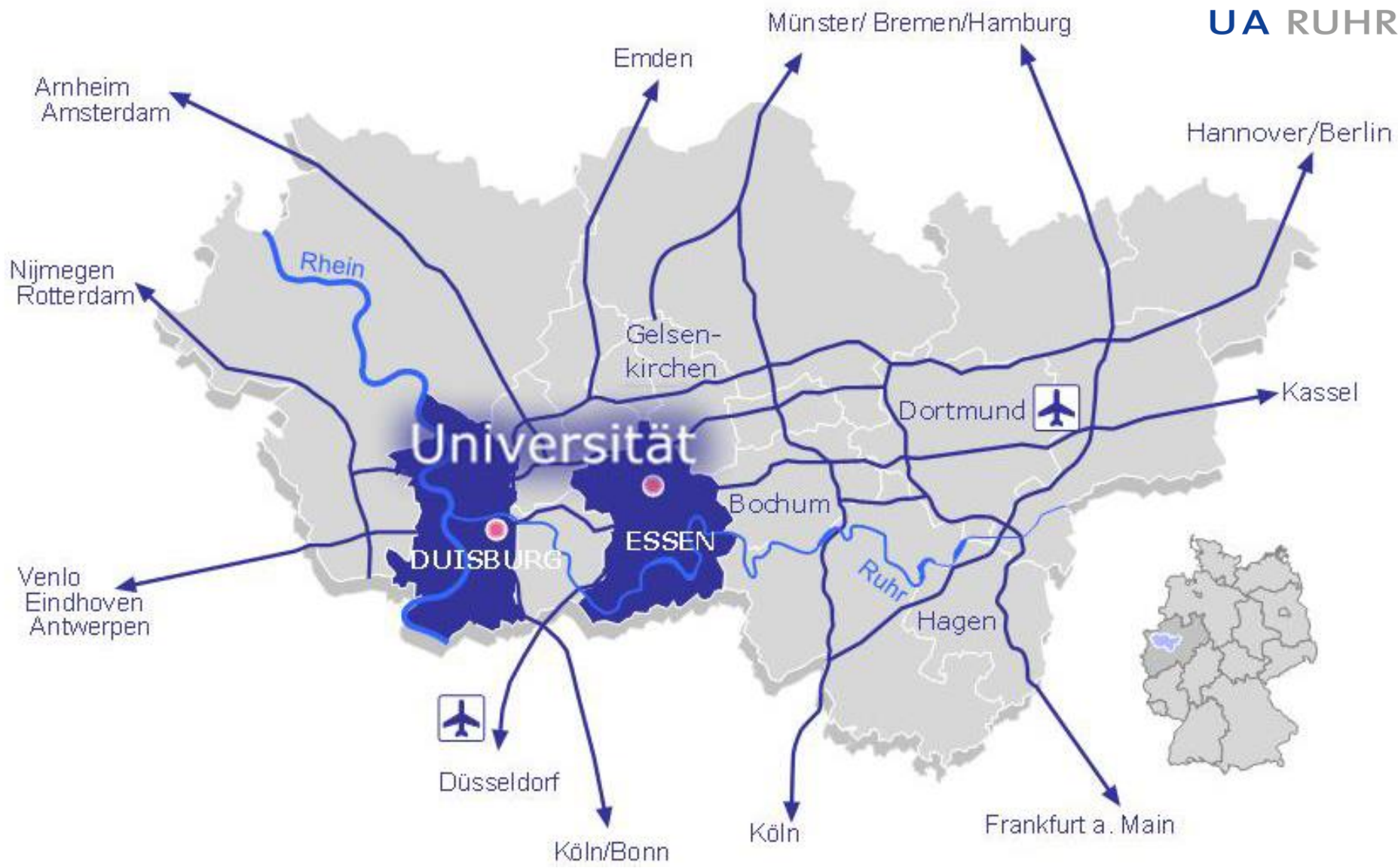
Focus research areas

- **Nanoscience**
- **Biomedical sciences**
- **Urban systems**
- **Transformation of contemporary societies**

Faculties

- Humanities
- Social Sciences
- Educational Sciences
- Business Administration
- Economics
- Mathematics
- Physics
- **Chemistry**
- Biology
- Engineering
- Medicine

Open-Minded



Campus Essen



Center for Nanointegration Duisburg-Essen (CeNIDE)

<https://www.uni-due.de/cenide/>

Since 2005, CENIDE links research and teaching activities that deal with the nano-dimension in natural sciences, engineering, biology, and medicine.

CENIDE is the community of **nano-researchers** at the UDE – the know-how of more than **60 working groups** is bundled. Some people from the Faculty of Chemistry:



Laser-Generated Functional Nanoparticles and Materials

- Bioactive nanocomposites and bioconjugation of Au-NPs, NP polymer composites

Prof. Stephan Barcikowski



Nano Bio Photonics

- Synthesis and physical properties of SERS NPs
- Nano bio photonics: tumor diagnostics
- Nano bio analytics: detection of molecule

Prof. Sebastian Schluecker



Nanostructured Catalysts

- NPs on porous supports
- Catalytic CO₂ conversion
- Materials for water oxidation

Prof. Malte Behrens



Supramolecular Self-Assembly

- Synthesis of self-assembling zwitterions
- Formation of NPs (vesicles or monolayers) in polar solvents and on surfaces

Prof. Carsten Schmuck



Nanobiomedicine

- NPs for medical application
- Nanocrystalline ceramics for biomedicine
- Biomaterials/biominerals

Prof. Matthias Epple



Thin Films and Nanoparticles

- Synthesis of organometallics
- Thin film deposition by MOCVD process
- Size- and shape-selective synthesis of NPs

Prof. Stephan Schulz



Nanoparticles and Nanocapsules based on Organic Matrices

- Synthesis of polymer nanocapsules
- Solid state NMR, pulsed field gradient NMR

Prof. Christian Mayer



Nanoparticles and Phase Boundaries

- Interactions of NPs with biomolecules
- Uptake of NPs on liquid surfaces
- Optical tweezing

Prof. Reinhard Zellner

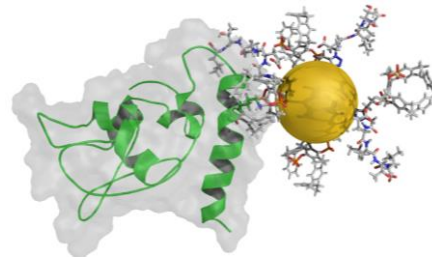
Meeting at NETZ/CENIDE (UDE, June 2017)



The Epple group

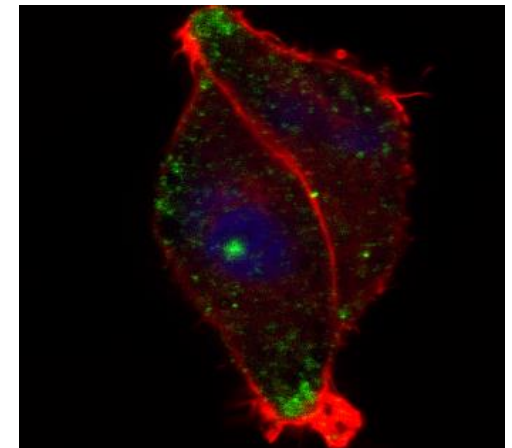
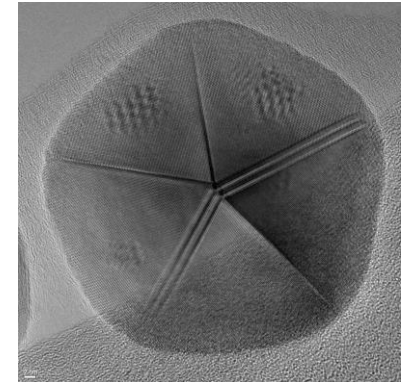
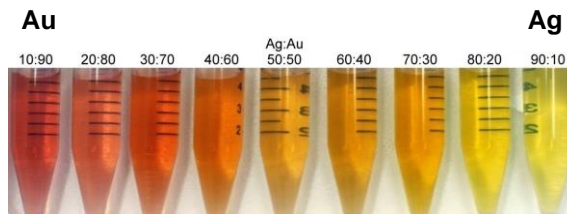
We are active in different aspects of

- solid state, bioinorganic and colloid chemistry
- biomaterials (polymers, metals, ceramics, composites)
- nanosciences



Examples:

- Calcium phosphate ceramics and polymers for bone substitution
- Functionalized nanoparticles (calcium phosphate and metals: Ag, Au, Pd, Pt, ...) for
- drug and gene delivery
- imaging and photodynamic therapy
- tumor targeting



International Office (Petra Günther)

Dr. Stephan Hollensteiner



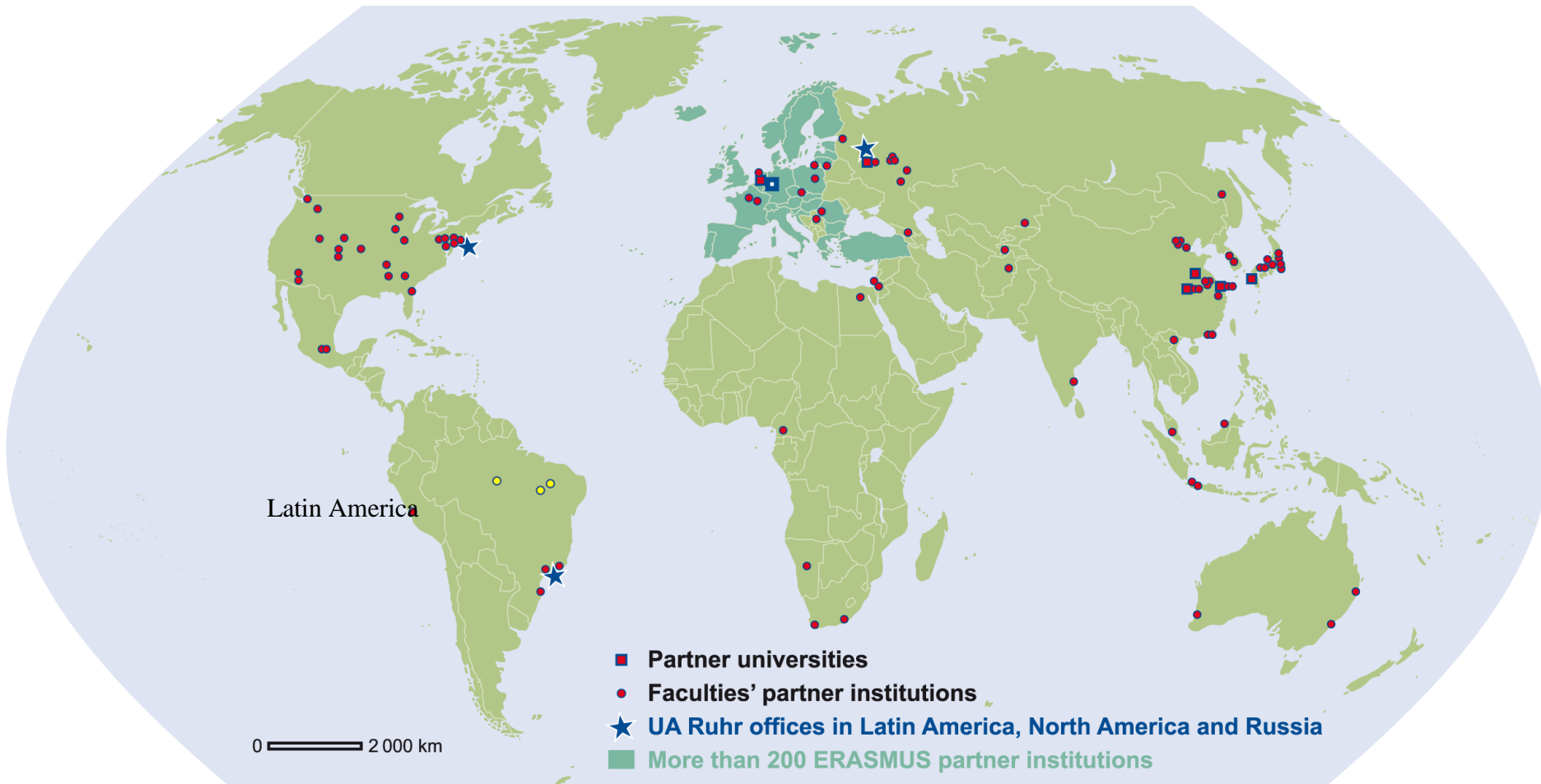
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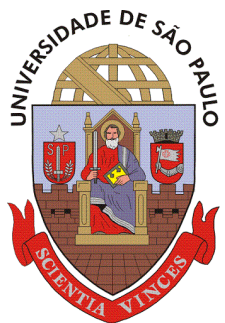
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Thank you very much
for your kind attention!!!



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DUISBURG
ESSEN

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Universidade Federal do ABC