

BayCEER Kolloquium

Lectures in Ecology and
Environmental Research

Winter 2024/25



UNIVERSITÄT
BAYREUTH

Donnerstag/Thursday

07.11.2024

12:15 in H6, GEO

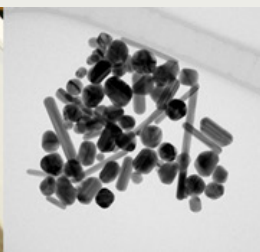
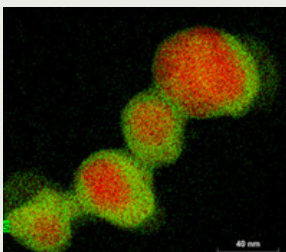


Dr. George Metreveli

Environmental Biogeochemistry, BayCEER

Engineered nanoparticles in the environment – Interactions, transformations, fate

Engineered nanoparticles (ENPs) are widely applied in several consumer products such as textiles, cosmetics, pigments, food containers, electronic products, or various components of cars. Several studies show that during usage, ENPs can be released from such products into the environment. Once released into the natural compartments, ENPs can undergo aging and physicochemical transformations and can interact with several inorganic and organic species or different abiotic and biotic interfaces. Environmental fate, distribution, and effects of ENPs usually depend on their size, morphology, shape, surface charge, chemical composition, concentration, type of surface coatings but also on the environmental conditions such as pH, ionic strength, redox potential, shear forces, and presence of dissolved organic matter. In this presentation, mechanisms and processes controlling the fate and distribution of ENPs in environmental systems will be discussed. Besides the laboratory experiments on the chemical transformation and agglomeration of ENPs, mesocosm studies evaluating the distribution, transformations, transport, and biological enrichment of ENPs in aquatic-terrestrial transition zone will also be presented.



Bayreuth Center of Ecology
and Environmental Research

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