

Wintersemester 2009/2010

Gebäude GEO I
Hörsaal H6

BayCEER Kolloquium

Vortragsreihe Ökologie und Umweltforschung

Donnerstag 05.11.2009, 16:15 Uhr, H6

Anschließend Postkolloquium mit Bier und Brezeln im Foyer H6

Prof. Dr. Alfred Hirner

Univ. Duisburg-Essen, Institut für Umweltanalytik und
Angewandte Geochemie

Alkylated metal(loid) species in environmental chemistry and medicine

Alkylated metal(loid) species occur in the environment preferentially within reducing and acid habitats; while methylated compounds are naturally formed by biomethylation, higher alkylated ones are of industrial origin (e.g. biocides). They can be found in fully and partly alkylated forms, thus resembling volatile (in air) and water soluble species, resp. Up to now more than hundred species have been described in highly variable concentrations (mass fractions from 10⁻¹² to 10⁻⁵). These concentrations significantly overlap with those for which biological effects are observed, so certain environmental scenarios ("hot spots") demand toxicological evaluation.

Besides investigating the toxicity of alkylated metal(loid) species in respect to human health, additionally it will be interesting to know, if methylation can also happen in the course of human metabolism. While this is fairly good known for methylation of arsenic in the liver, it seems not to be the case for mercury (where mainly demethylation is reported).

Our group was successful to prove some methylation for bismuth, but for this element another interesting pathway could be pointed out: Methylated forms can be formed in the colon via biomethylation, and subsequently are found in blood and exhaled air.

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