



Transport of Polycyclic Aromatic Hydrocarbons in Unsaturated Porous Media

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Polycyclic aromatic hydrocarbons (PAHs) are complex organic molecules containing 2 or more fused benzene rings. Being hydrophobic and non-polar, PAHs tend to partition to the organic matter in the soil from bulk aqueous phase. Though transport of these contaminants has been well studied in saturated environment, interactive mechanisms of these fluorescent compounds in unsaturated (identified by presence of air-water interface) porous media is still not well understood. We studied is the transport of fluoranthene in unsaturated porous media as facilitated by moving air-water interfaces. Confocal microscopy was used to visualize the interactions of fluoranthene particles in a glass channel packed with quartz glass beads. The packed glass channel was used to mimic a porous media and effects of an advancing and receding capillary fringe on the detachment of fluoranthene.