Environmental Remediation of Uranium Mining and Processing Sites

Environmental remediation of mining and mineral processing sites, and leaving them behind in a sustainable end state, is one of the challenges of the mineral industry. Whilst mining is a fundamental pillar of almost every economic activity, it has earned a stained reputation by massive environmental problems after closure. New mining projects meet growing resistance almost everywhere, and the mining industry urgently needs credible success stories to ensure uninterrupted supply of raw materials.

Using the example of uranium ore mining and processing, this talk introduces into the life cycle of mines and illustrates the environmental legacy of uranium production and technical options to rehabilitate affected sites. Examples of successful remediation include the legacy sites in Saxony and Thuringia (Wismut Project) and many others around the world. The talk will also briefly look at case studies, such as convective radon transport and dust generation from uranium mining and processing waste, to demonstrate how applied physics can help in the remediation of uranium production sites.