

# **Innovative Technologies for the Remediation of PFAS-contaminated Water and Soil**

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Per- and polyfluoroalkyl substances (PFASs) have been widely used in industries due to their unique properties that have not been evidenced from other substances. These unique properties include their simultaneous hydrophobicity and oleophobicity, thermal / chemical stability etc. Consequently, their wide applications, such as in formulations and as in ingredients in fire-fighting foams, have led to their global distribution. Unfortunately, PFASs are persistent, bio-accumulative, toxic and resistant to typical environmental degradation processes. PFAS persistence in the environment has led to significant distribution in the terrestrial environment, including soil and water. Given the recent recognition of PFASs' potential toxicity to human and environmental health, unless remediated, these compounds are likely to exist in the environment for several decades, if not centuries, into the future. Therefore, effective treatment is highly desirable. Given community outrage and successful class actions in the US and Australia, owners of PFAS-contaminated sites are spending millions of dollars on contaminated site assessment and management. This paper presents an overview of the strategies currently being used to manage PFAS contamination of soil and water. The paper also touches on a select few technologies that show potential for mineralisation of PFAS, which is yet to be tested and validated in the field.