

## **ADSORPTIVE FILTRATION FOR WATER TREATMENT**

Chuanfang Yang, Institute of Process Engineering, CAS

Traditional adsorptive filtration typically deals with ionic resins, molecular sieves, smokeless coal powders, activated carbons or other kinds of adsorbents packed in a column bed that takes sizable spaces. In recent years, thin materials in membrane or fibrous media form have become more popular as alternatives to columns for water filtration and purification. However, these materials must serve the purpose of low operation pressure and high efficiency of capture of the target species. In this talk, I will discuss three such technologies developed in our lab, including affinity PVDF membranes, electrospun chitosan nanofiber membranes and TiO<sub>2</sub>/cellulose filter media. These materials are designed to either remove small concentration ionic pollutants such as Cr(VI) and Pb(II), or to recover gold or other precious metals from wastewater with various degrees of success.