国际联合研究中心/环境科学与工程学院/天津市水质安全评价与保障技术工程中心-学术报告会

题目：淀粉蛋白混合膜去除水中的重金属污染物并回收金

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☆ Reporter

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☆ Reporter profile

Sreenath Bolisetty博士是苏黎世联邦理工学院，健康科学与技术系高级研究员(Senior scientist), 担任瑞士BLUACT科技公司CEO, 研究工兴趣基于食品蛋白（乳球蛋白，牛血清蛋白）为核心的新型淀粉样纤维材料制备及功能应用。近年来，围绕该研究领域在Nature Nanotechnology，Nature Communication，ACS Nano，Advanced Materials等国际一流期刊发表高水平研究论文50余篇，授权国际专利 4项，最新研究技术淀粉样纤维膜获得苏黎世联邦最具潜力专利技术奖。2016年在Bolisetty投资下成立了苏黎世联邦理工学院的衍生企业—BluAct科技有限公司（BluAct Technologies GmbH）。Bolisetty兼任CEO和首席技术官，将该研究技术用于水中重金属，砷，以及放射性核素的深度去除。

☆ Abstract

Amyloid hybrid membranes: Removal of heavy metal contaminants from water and recover gold

Sreenath Bolisetty and Raffaele Mezzenga

Novel technology in which hybrid membranes made from β-lactoglobulin protein fibrils and porous carbon for the treatment of water contaminated with heavy metals, metal cyanides or radioactive substances. During filtration, the concentration of heavy metal ions drops by three to five orders of magnitude per passage and the process can be repeated numerous times. The protein fibrils in the composite membrane play the main role of sequestering heavy metal pollutants from the liquid. Importantly, these protein fibrils also allow the reduction of membrane-immobilized metal ions into valuable metal nanoparticles or thin films at elevated temperatures or via chemical routes, turning a global risk challenge into a unique opportunity.