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NORTH CHINA ELECTRIC POWER UNIVERSITY

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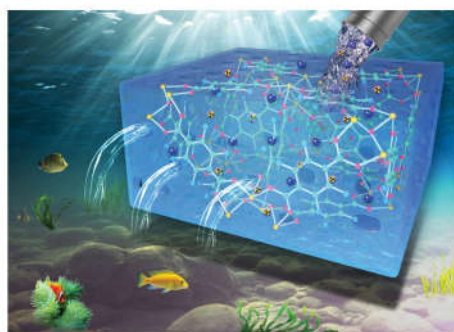
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我校在去除金属离子污染物与环境污染治理科研取得重要成果

发布时间：2018-04-23 浏览 1287 次

近日，我校环境科学与工程学科科研团队在国际高水平期刊《Chemical Society Review》（影响因子38）上发表了关于金属-有机物框架污染物材料的高效吸附研究的综述性论文：《Metal-organic framework-based materials: superior adsorbents for the capture of toxic and radioactive metal ions》（封底论文）。随着工业与核技术的发展，有毒及放射性金属离子的泄露问题日益严峻，降低其在自然环境中的含量和危害也成为当今热门的研究课题。此次论文的发表是我校环境学院就重金属离子污染物的高效去除问题在国际高影响因子期刊上发表学术论文的又一重大突破，将提高我校在重金属离子污染物去除领域的国际知名度及影响力。



Featuring work from the research group of Professor Xiangke Wang, North China Electric Power University, Beijing, P. R. China.

Metal-organic framework-based materials: superior adsorbents for the capture of toxic and radioactive metal ions.

Highly porous metal-organic frameworks, with excellent chemical stability and abundant active sites represent a new addition to the area of capturing various types of toxic and radioactive metal ions.

As featured in:



See Guixia Zhao, Changlin Chen, Xiangke Wang et al., Chem. Soc. Rev. 2018, 47, 3322.

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REVIEW ARTICLE

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Chem. Soc. Rev., 2018, 47, 3322

Metal-organic framework-based materials: superior adsorbents for the capture of toxic and radioactive metal ions

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Highly efficient removal of metal ion pollutants, such as toxic and nuclear waste-related metal ions, remains a serious task from the biological and environmental standpoint because of their harmful effects on human health and the environment. Bearing highly porous metal-organic frameworks (MOFs) with excellent chemical stability and abundant functional groups, have represented a new addition to the area of capturing various types of hazardous metal ion pollutants. This review focuses on recent progress in reported MOFs and MOF-based composites as superior adsorbents for the efficient removal of toxic and nuclear waste-related metal ions. Insights related to the interaction mechanisms between metal ions and MOF-based materials are systematically summarized, including macroscopic batch experiments, microscopic spectroscopy analysis, and theoretical calculations. The adsorption properties of various MOF-based materials are assessed and compared with those of other widely used adsorbents. Finally, we propose our personal insights on future research opportunities and challenges in the topic of attracting more researchers to engage in this new field of MOF-based materials for environmental pollution management.

Received 26th September 2017

DOI: 10.1039/C7CS00424a

rsos.1704966

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Xiangke Wang

Dr Xiangke Wang received his MS degree in 2001 from Anhui University of Architecture and Technology, and his PhD in 2007 from the University of Science and Technology of China. He is currently an associate professor at North China Electric Power University, China. His interests include the synthesis of porous-based nanomaterials, and their applications in pollution management. He has published over 20 papers in peer-reviewed journals.



rsos.li/chem-soc-rev
https://doi.org/10.1039/C7CS00424a

3322 | Chem. Soc. Rev., 2018, 47, 3322-3352

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此外，我校王祥科教授研究团队的两篇论文：《Understanding the adsorption mechanism of Ni(II) on graphene oxides by batch experiments and density functional theory studies》、《Reductive immobilization of Re(VII) by graphene modified nanoscale zero-valent iron particles using a plasma technique》在2018年评选中当选“中国科学化学2016年度优秀论文”。“中国科学年度优秀论文”代表着我国科学领域最新以及影响最深远的研究成果。此次入选是对我校在重金属离子去除研究已取得成果的肯定，将大大增强我校“环境/生态”的学科影响力。



2017年，我校“环境/生态学”进入ESI排名世界前1%，成为我校继工程学后第二个进入世界前1%的学科。华北电力大学环境科学与工程学院将继续以科技创新为动力，形成华电特色的环境化学优势学科体系，提升整体科研水平和科研力量以期达到国内同类院校的领先水平。

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