



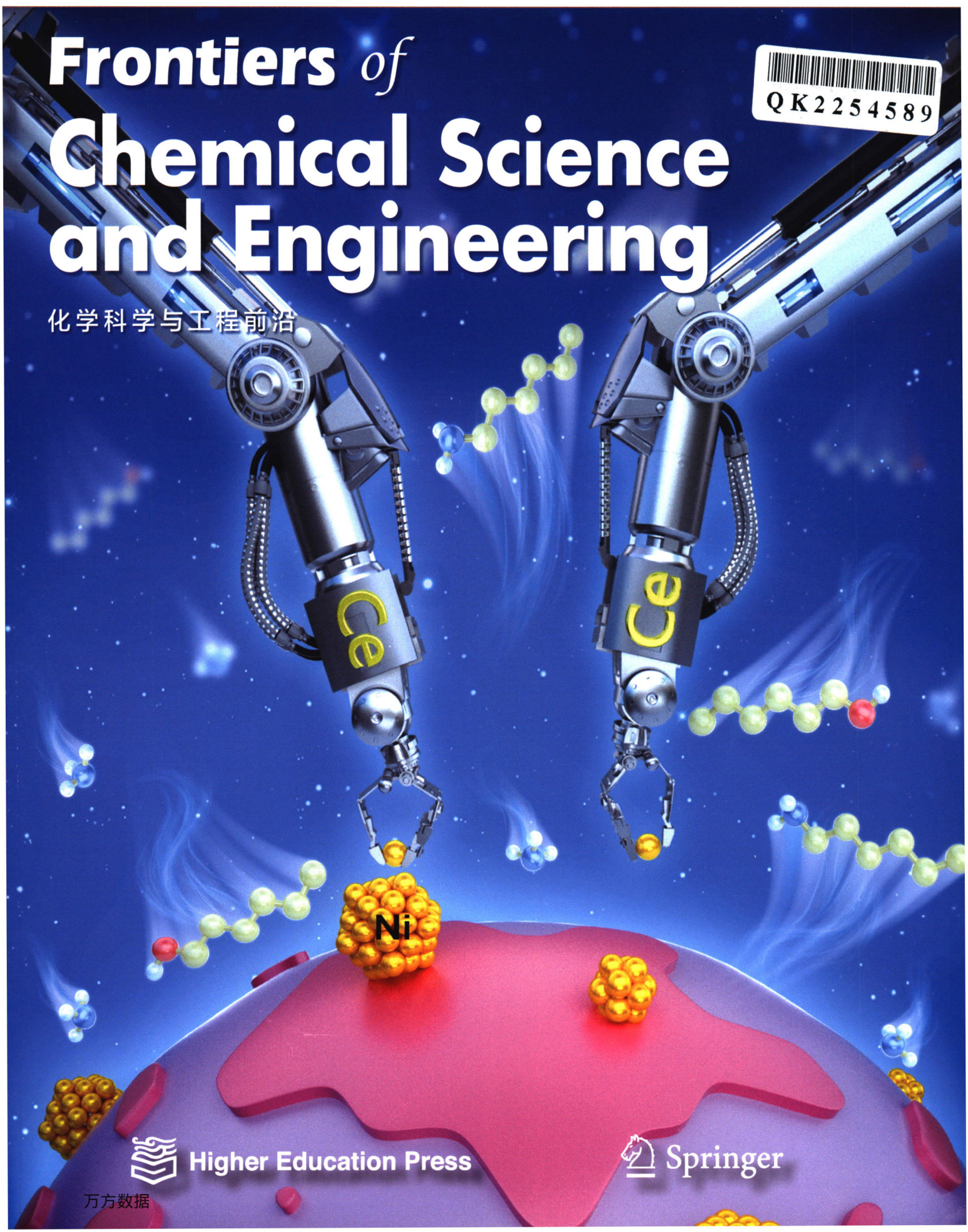
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# Frontiers of Chemical Science and Engineering

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万方数据



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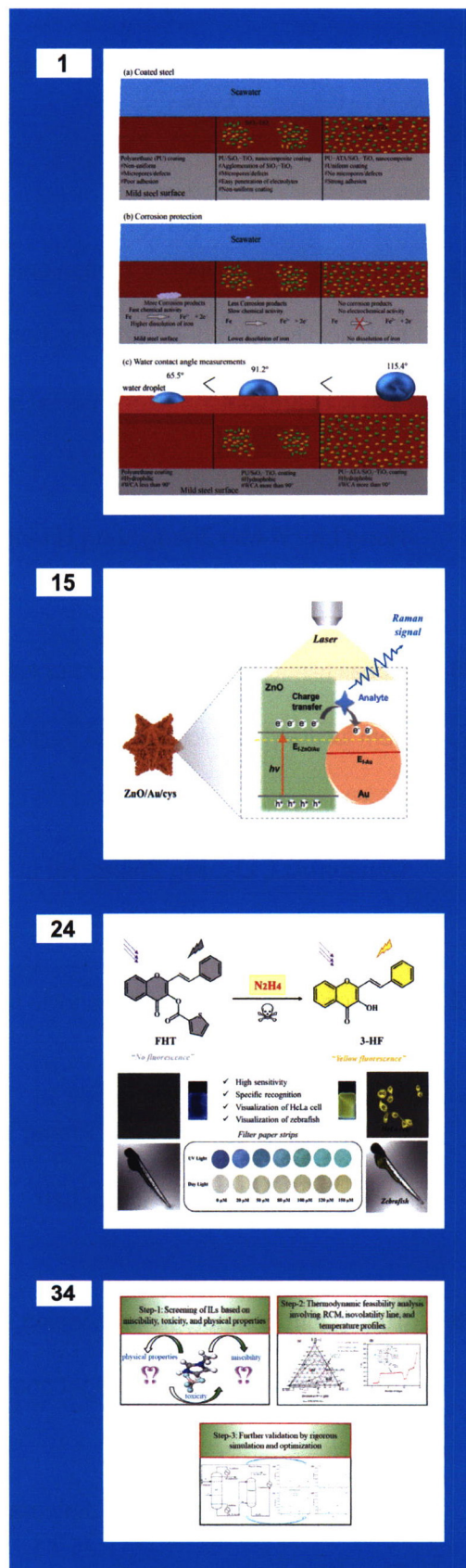
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- 1 Influence of surface modified mixed metal oxide nanoparticles on the electrochemical and mechanical properties of polyurethane matrix  
**Joseph Raj Xavier**

- 15 Cystine-assisted accumulation of gold nanoparticles on ZnO to construct a sensitive surface-enhanced Raman spectroscopy substrate  
**Qi Qu, Chuan Zeng, Jing Huang, Mengfan Wang, Wei Qi, Zhimin He**

- 24 A novel flavonol-based colorimetric and turn-on fluorescent probe for rapid determination of hydrazine in real water samples and its bioimaging *in vivo* and *in vitro*  
**Ahui Qin, Yan Zhang, Shuai Gong, Mingxin Li, Yu Gao, Xu Xu, Jie Song, Zhonglong Wang, Shifa Wang**

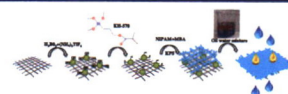
- 34 Systematic screening procedure and innovative energy-saving design for ionic liquid-based extractive distillation process  
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- 46** Fabrication of a superhydrophilic/underwater superoleophobic stainless steel mesh for oil/water separation with ultrahigh flux
- Jiawei Wang, Jie Hu, Junjie Cheng, Zefei Huang, Baoqian Ye**
- 56** Vanadium(IV) solvent extraction enhancement in high acidity using di-(2-ethylhexyl)phosphoric acid with  $[Cl^-]$  present: an experimental and theoretical study
- Hong Liu, Yi-Min Zhang, Jing Huang, Tao Liu**
- 68** Cobalt nitride enabled benzimidazoles production from furyl/aryl bio-alcohols and *o*-nitroanilines without an external H-source
- Chuanhui Li, Li-Long Zhang, Hu Li, Song Yang**
- 82** Reductive amination of *n*-hexanol to *n*-hexylamine over Ni-Ce/ $\gamma$ -Al<sub>2</sub>O<sub>3</sub> catalysts
- Pengfei Li, Huijiang Huang, Zheng Wang, Ziying Hong, Yan Xu, Yujun Zhao**
- 93** Tuning nitrogen defects and doping sulfur in carbon nitride for enhanced visible light photocatalytic activity
- Huilin Xu, Xiangfeng Peng, Jingxuan Zheng, Zhao Wang**

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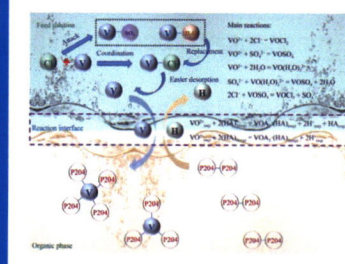
Fabrication of a superhydrophilic/underwater superoleophobic stainless steel mesh for oil/water separation with ultrahigh flux



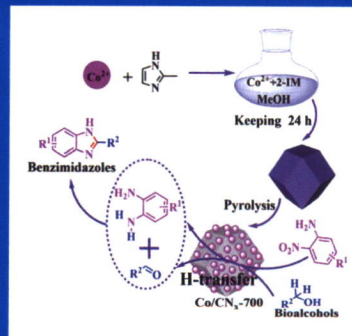
Conclusion:

A superhydrophilic/underwater superoleophobic N-isopropylacrylamide-coated stainless steel mesh was prepared through a simple and convenient graft polymerization approach. The mesh can separate oil/water mixture with high separation efficiency (>99.2%) and ultrahigh water flux (235239 L m<sup>-2</sup> h<sup>-1</sup>).

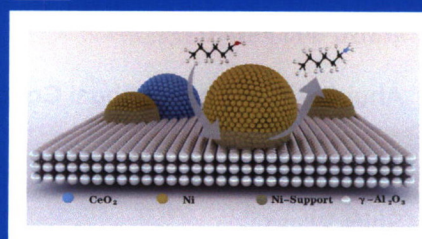
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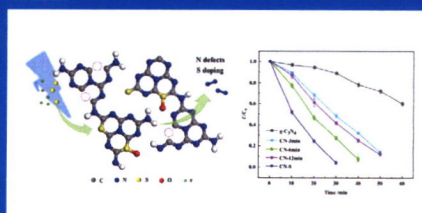
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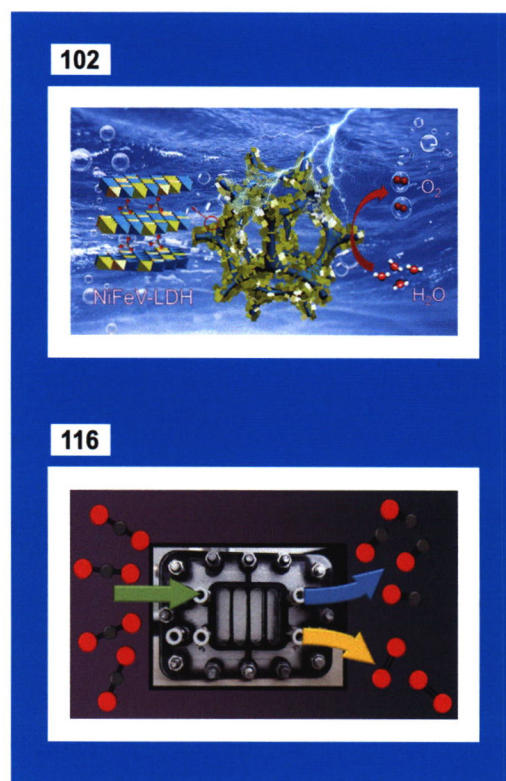
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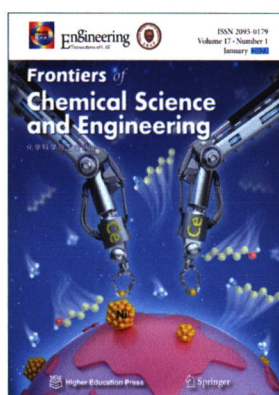


- 102** Synergistic effect of V and Fe in Ni/Fe/V ternary layered double hydroxides for efficient and durable oxygen evolution reaction
- Lihong Chen, Ruxin Deng, Shaoshi Guo, Zihuan Yu, Huiqin Yao, Zhenglong Wu, Keren Shi, Huifeng Li, Shulan Ma**



## COMMUNICATION

- 116** Scale up of reactors for carbon dioxide reduction
- Andrew Nattestad, Klaudia Wagner, Gordon G. Wallace**



## COVER

The amination of alkyl alcohols is one of the most promising paths to synthesize aliphatic amines. Herein, cerium modified nickel-based catalysts were synthesized for the gas-phase amination of alkyl alcohol. It was found that the activity of amine is significantly enhanced by doping the Ni/ $\gamma$ -Al<sub>2</sub>O<sub>3</sub> catalyst with cerium. The overall synergy of Ni nanoparticles and acid sites on Ni-Ce/ $\gamma$ -Al<sub>2</sub>O<sub>3</sub> catalyst boosts its catalytic performance in the amination of alkyl alcohols. (Pengfei Li, Huijiang Huang, Zheng Wang, Ziyang Hong, Yan Xu, Yujun Zhao, pp. 82–92)



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