

# Industrial Chemistry & Materials

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## IN THIS ISSUE

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### Cover

See Ryan P. Lively,  
Christopher W. Jones *et al.*,  
pp. 52-64.  
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Mater.*, 2026, 4, 52.

## REVIEWS

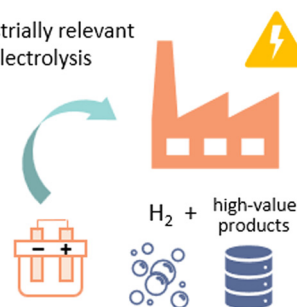
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### Electrooxidation of alcohols under the operating conditions of industrial alkaline water electrolysis

Floris van Lieshout, Eleazar Castañeda-Morales, Arturo Manzo-Robledo and Dulce M. Morales\*

Oxidizing alcohols under industrially relevant conditions for alkaline water electrolysis

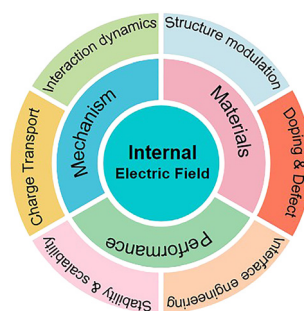
- ✓ High current density
- ✓ Low overpotential
- ✓ Concentrated electrolyte
- ✓ High selectivity
- ✓ Elevated temperatures



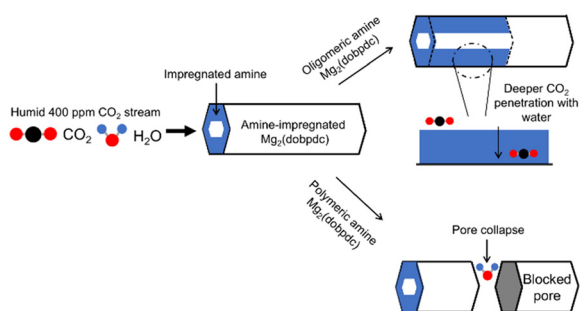
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### Engineering internal electric fields in photoelectrochemical systems for enhanced hydrogen evolution: mechanisms, characterization and design strategies

Fen Qiao\* and Bo Li



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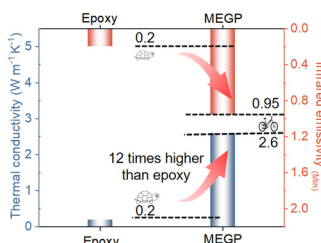


### Amine-dependent CO<sub>2</sub> sorption on amine-impregnated Mg<sub>2</sub>(dobpdc) MOF under humid conditions

MinGyu Song, Guanhe Rim, Ghazal Mirzazadeh, Jacob Hoffman, Hyun June Moon, Johannes E. Leisen, Omid Ghaffari Nik, Ryan P. Lively\* and Christopher W. Jones\*

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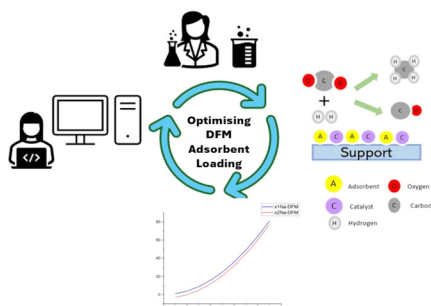
- ✓ High thermal conductivity
- ✓ High infrared emissivity
- ✓ Anti-corrosion
- ✓ Good adhesion
- ✓ Eco-friendly



### A novel high thermal conductivity powder coating based on synergistic reinforcement of heat conduction and infrared heat radiation

Di Bao, Junqi Ning, Dan Lin, Sicheng Yuan, Jianwen Peng, Yue Sun, Huaiyuan Wang,\* Yanji Zhu and Ruitao Wang

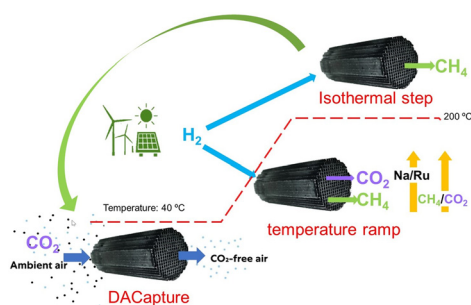
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### Effect of adsorbent loading on NaNiRu-DFMs' CO<sub>2</sub> capture and methanation: finding optimal Na-loading using Bayesian optimisation guided experiments

Soudabeh Bahrami Gharamaleki, Sergio Carrasco Ruiz, Tomas Ramirez Reina, Michael Short and Melis S. Duyar\*

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### Bifunctional Na–Ru on gamma-alumina for CO<sub>2</sub> capture from air and conversion to CH<sub>4</sub>: impact of the regeneration method and support on monolithic contactors

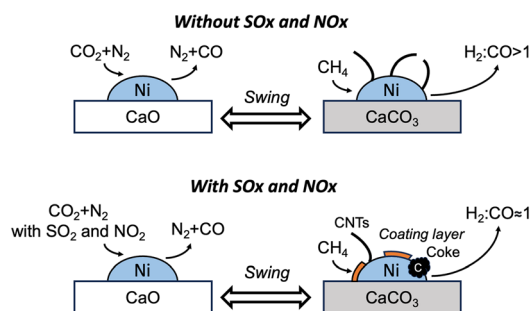
Enrique García-Bordejé,\* José M. Conesa, Antonio Guerrero-Ruiz and Inmaculada Rodríguez-Ramos



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### Integrated CO<sub>2</sub> capture and methane dry reforming over a Ni–Ca dual functional material under SO<sub>2</sub>/NO<sub>2</sub>-containing flue gas conditions: a mechanistic study

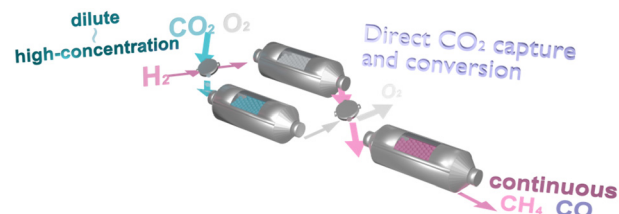
Bocheng Yu, Muqing Yang, Yijian Qiao, Yaozu Wang, Yongqing Xu, Xuan Bie, Qinghai Li, Yanguo Zhang, Shuzhuang Sun\* and Hui Zhou\*



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### Continuous direct air capture and conversion tandem system applicable to a wide range of CO<sub>2</sub> concentrations

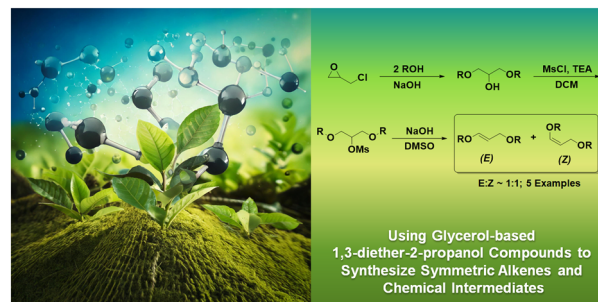
Shinta Miyazaki, Akihiko Anzai,\* Masaki Yoshihara, Hsu Sheng Feng, Shinya Mine, Takashi Toyao and Ken-ichi Shimizu\*



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### Synthesis and properties of symmetric glycerol-derived (*E/Z*)-1,3-diether-2-alkenes

Jun Wang, Shuai Qian, Gbolagade Olajide, Sourav Chatterjee, Tibor Szilvási and Jason E. Bara\*



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