

# Sustainable Energy & Fuels

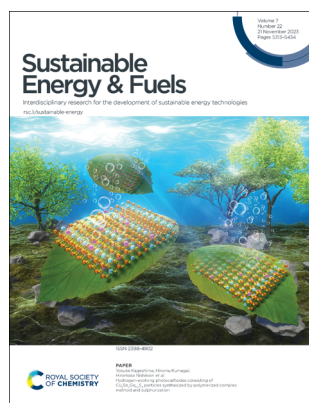
Interdisciplinary research for the development of sustainable energy technologies

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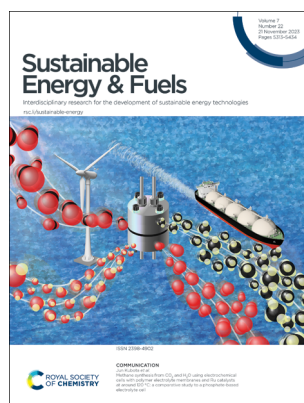
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ISSN 2398-4902 CODEN SEFUA7 7(22) 5313–5434 (2023)



### Cover

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### Inside cover

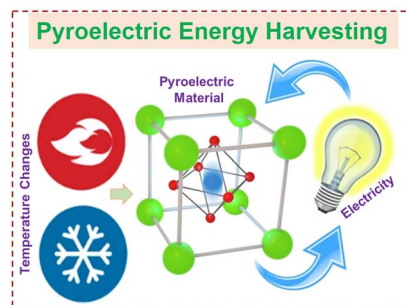
See Jun Kubota *et al.*, pp. 5336–5341. Image reproduced by permission of Jun Kubota from *Sustainable Energy Fuels*, 2023, 7, 5336.

## REVIEW

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### Pyroelectric based energy harvesting devices: hybrid structures and applications

Swati Panda, Sugato Hajra, Heewon Song, Junghun Jo, Nayoon Kim, Subhin Hwang, Yoobin Choi, Hang Gyeom Kim, Hoe Joon Kim\* and Yogendra Kumar Mishra\*

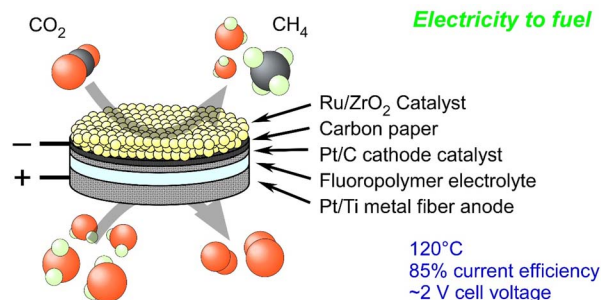


## COMMUNICATION

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### Methane synthesis from CO<sub>2</sub> and H<sub>2</sub>O using electrochemical cells with polymer electrolyte membranes and Ru catalysts at around 120 °C: a comparative study to a phosphate-based electrolyte cell

Raisei Sagara, Rika Hayashi, Aika Hirata, Shintaroh Nagaishi and Jun Kubota\*



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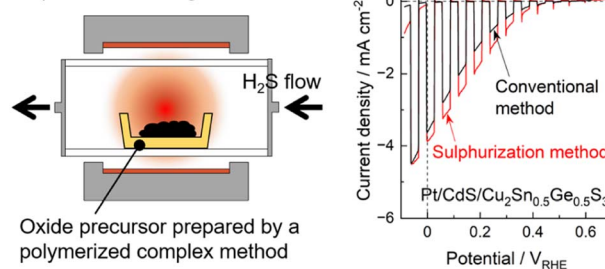
## PAPERS

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### Hydrogen-evolving photocathodes consisting of $\text{Cu}_2\text{Sn}_x\text{Ge}_{1-x}\text{S}_3$ particles synthesized by polymerized complex method and sulphurization

Yosuke Kageshima,\* Yusuke Ooka, Hiromu Kumagai,\* Fumiaki Takagi, Katsuya Teshima, Kazunari Domen and Hiromasa Nishikiori\*

Sulphurization using a tubular furnace

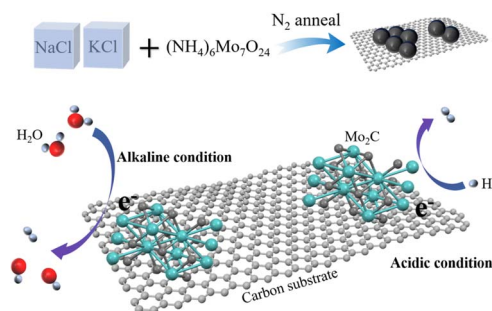


Oxide precursor prepared by a polymerized complex method

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### One-step molten-salt synthesis of adjustable composition molybdenum carbide-based electrocatalysts for hydrogen evolution in both acidic and alkaline media

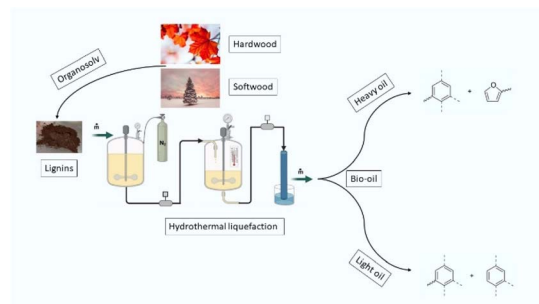
Gengqin Wang, Junqi Li,\* Beiyi Zhang, Taotao Zhang, Zili Zheng and Kun Jiang



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### On the understanding of bio-oil formation from the hydrothermal liquefaction of organosolv lignin isolated from softwood and hardwood sawdust

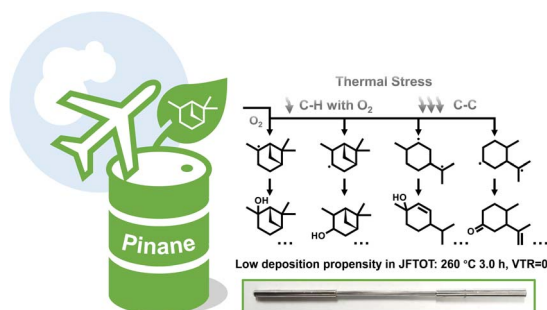
Petter Paulsen Thoresen, Jonas Fahrni, Heiko Lange, Jasmine Hertzog, Vincent Carré, Ming Zhou, Anna Trubetskaya, Frédéric Aubriet, Jonas Hedlund, Tomas Gustafsson, Ulrika Rova, Paul Christakopoulos and Leonidas Matsakas\*



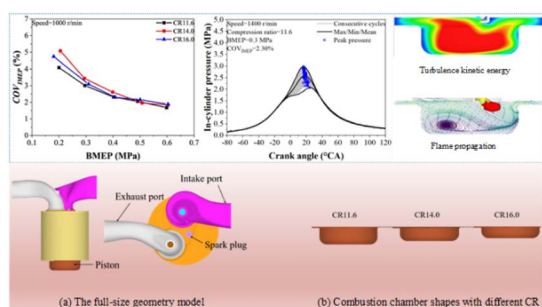
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### Low-temperature thermal oxidation of biomass jet fuel pinane

Ji Mi, Xinyang Chen, Panxi Wu, Yitong Dai,\* Yongsheng Guo\* and Wenjun Fang



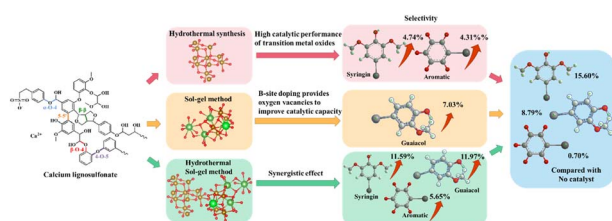
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### Effect of high compression ratio on cycle-to-cycle variations of a natural gas engine under low load conditions

Tao Qin, Fan Zhang, Zheng Chen,\* Bin Liao, Xianyan Lin, Yong Guo and Jianqin Fu

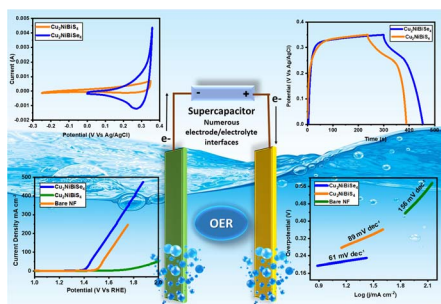
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### Catalytic depolymerization of calcium lignosulfonate to high-value oxygenated aromatic compounds over the efficient $\text{Fe}_2\text{O}_3\text{-La}_{0.8}\text{Sr}_{0.2}\text{FeO}_3$

Jitong Deng, Jiaren Zhang, Yongjun Zhang, Hongjing Han,\* Haiying Wang, Huimin Yuan, Yanan Zhang and Yanguang Chen\*

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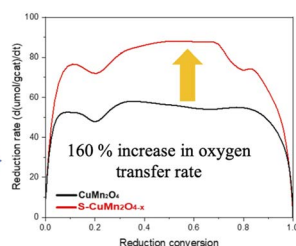
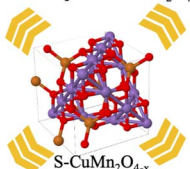
### Facile synthesis of novel $\text{Cu}_2\text{NiBiX}_4$ ( $\text{X} = \text{Se}, \text{S}$ ) chalcogenides as bifunctional electrocatalysts for oxygen evolution reaction (OER) and supercapacitive performance

Muhammad Umer, Muhammad Awais, Anas Bilal, Arshia Iqbal, Javaria, Sidra Aslam, Misbah Mirza\* and Muhammad Safdar\*

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Sulfidation process, followed by subsequent reoxidation generate

Lattice Expanded  $\text{CuMn}_2\text{O}_4$



### Enhanced oxygen transfer rate of chemical looping combustion through lattice expansion on $\text{CuMn}_2\text{O}_4$ oxygen carrier

Boseok Seo, Jimin Lyu, Namgyu Son, Misook Kang, No-Kuk Park, Seung Jong Lee, Jin Wook Lee, Yongseung Yun, Ho-Jung Ryu, Jeom-In Baek, Dohyung Kang\* and Minkyu Kim\*

