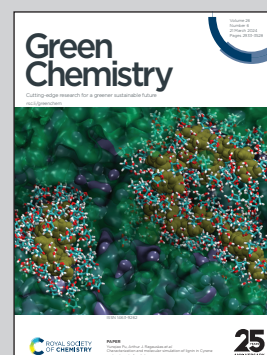


Showcasing research from Professor Liangdong Fan's laboratory, College of Chemistry and Environmental Engineering, Shenzhen University, Shenzhen, Guangdong, China.

Electronic engineering and oxygen vacancy modification of $\text{La}_{0.6}\text{Sr}_{0.4}\text{FeO}_{3-\delta}$ perovskite oxide by low-electronegativity sodium substitution for efficient CO_2/CO fueled reversible solid oxide cells

High temperature electrochemical CO_2 reduction/utilization using solid oxide cells holds unique thermodynamic and kinetic advantages. An active electrode catalyst is highly desirable. In this article, the authors demonstrated that the doping of sodium cation (Na^+) in $\text{La}_{0.6}\text{Sr}_{0.4}\text{FeO}_{3-\delta}$ increases oxygen vacancy concentration, modulates the electronic structure, and improves chemical adsorption, which co-contribute to superior CO_2 reduction performance and bi-functional activity toward CO_2/CO reversible conversion, showing practical potential for a carbon neutral cycle.

As featured in:



See Yihang Li, Pei-Chen Su, Liangdong Fan *et al.*, *Green Chem.*, 2024, 26, 3202.