

Electrochemical Catalyst for Conversion of CO₂ to Ethanol

Disclosure Number

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Technology Summary

The present invention comprises a non-precious-metal electrocatalyst that can convert CO₂ in water (in the form of CO₂ bubbled through a carbonate solution) directly to ethanol. The process can be carried out at room temperature and a potential of up to -1.9 V, with a Coulombic efficiency of about 70%. The other products are H₂ and CO. Since the process is electrochemically reversible and operates at room temperature, the system may be turned on and off at will, making the present invention an ideal way to utilize excess variable electricity from sources such as wind farms, solar arrays, and hydroelectric facilities.

Inventor

RONDINONE, ADAM J
Center for Nanophase Matls Sciences

Licensing Contact

CALDWELL, JENNIFER T

UT-Battelle, LLC

Oak Ridge National Laboratory

Rm 137, Bldg 4500N6196

1 Bethel Valley Road

Oak Ridge, TN 37831

Office Phone: (865) 574-4180

E-Mail: CALDWELLJT@ORNL.GOV