Design and synthesis of Porous Organic Cage for Electro-catalytic Oxygen Reduction Reaction in fuel Cell

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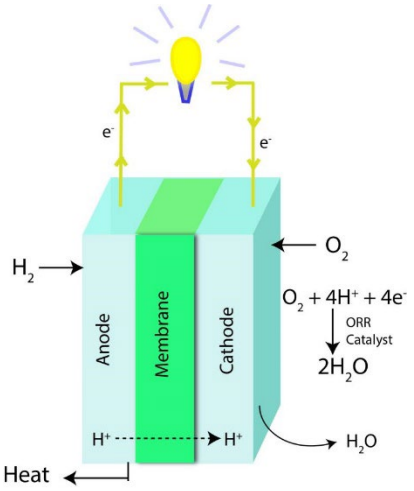
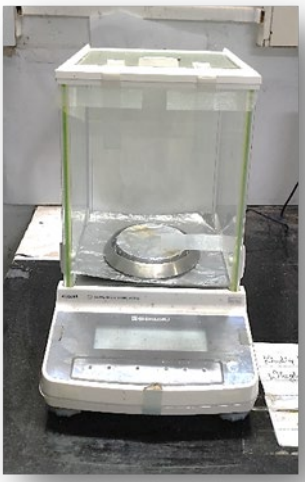
Graphical Abstract/ Lavout

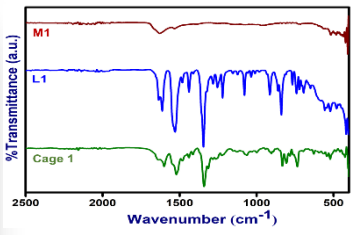


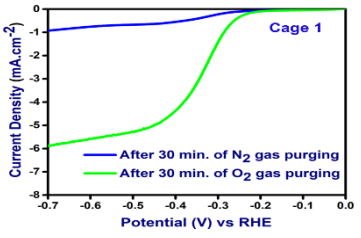
Project Description:

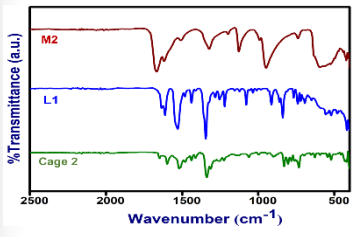
Porous Organic Cages are recognized for their architectural design and chemical functionality in a variety of applications. However, there has been limited research on using porous Organic Cages for the electro-catalyzed Oxygen Reduction Reaction (ORR) in fuel cells. This proposal aims to develop new materials that catalyze the ORR in fuel cell technology, focusing on the importance of O_2 binding at the catalytic site. The research is expected to provide further insights into electro-catalytic ORR using well-defined, crystalline, and extended porous Organic cage structures. The project aims to identify new materials for ORR electrocatalysis in fuel cells, a highly demanding area of research. Although research on porous Organic Cage materials is still in its early stages, experts suggest that porous Organic Cages could be highly effective for various applications. Promising results in porous Organic Cages synthesis and application for electro-catalytic ORR will be considered for patenting through CSIR Innovation.

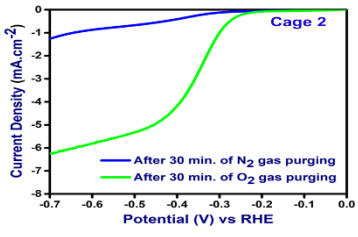
Products/ Instruments/ Results/ Outreach Activities (Pictures)











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Name of the Funding Agency
Council Of Scientific And Industrial Research–Human Resource Development Group (CSIR-HRDG)

Name of the Scheme
Extramural Research

Sanctioned Amount (in Rupees)
Rs. 14,00,000

Duration of the Project (years)
3