NANOCORAL™ HIGH SURFACE AREA PLATINUM CATALYSTS TO IMPROVE FUEL CELL EFFICIENCY

TECHNOLOGY READINESS LEVEL: 4

KEY ELEMENTS HAVE BEEN DEMONSTRATED IN A LABORATORY ENVIRONMENT.

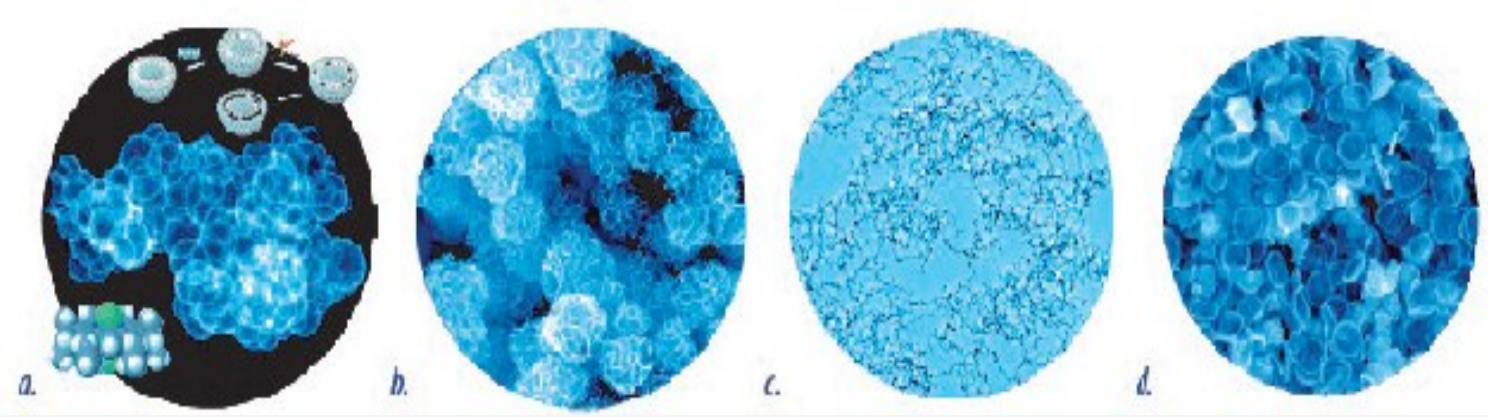
US PATENT #S 7,374,599 & 6,627,048

ADDITIONAL U.S. PATENTS PENDING

TECHNOLOGY SUMMARY

NanoCoral™ produces platinum nanomaterials which can significantly reduce costs and improve the efficiency and durability of hydrogen fuel cells and other renewable energy technologies.

NanoCoral™ is an innovative nanotechnology for producing platinum catalysts and offers unique control over the shape, size, porosity, composition, stability, and other functional properties of platinum nanostructures compared with those achieved by existing methodologies.



Some of the complex platinum nanostructures that can be produced, offering a wide range of potential applications in addition to hydrogen fuel cells: (a) platinum nanocage spheres template (b) nanospheres 'foam' composed of convoluted dendritic nanosheets template (c) 2 nm diameter nanowire networks template and (d) platinum nanowheels template

The metals nanostructuring technology is based on two novel platform technologies—templated dendritic nanostructure growth and photocatalytic seeding and growth. Dendritic and ripening-resistant holey-sheet nanocatalyst technology enables the size and shape of platinum structures to be manipulated at the nanoscale to produce novel platinum catalysts and electrocatalysts and other nanomaterials. NanoCoral™ was recognized as an R&D 100 technology by *R&D Magazine* in 2009.

POTENTIAL APPLICATIONS

- Fuel & Solar Cells
- Sensors
- Electronics
- Catalysis

TECHNOLOGICAL BENEFITS

- Reduces amount of rare and expensive raw materials used
- Retains functionality with less material

TECHNOLOGY INQUIRY?

For more information or licensing opportunities contact us at

ip@sandia.gov

or visit

https://ip.sandia.gov

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