

APPARATUS TO PRODUCE GRAPHENE (RGO)

Invention Summary:

Graphene can be produced from Sri Lanka (then Ceylon) through oxidation and reduction method. Industrial Technology Institute (ITI) Sri Lanka, discloses an innovative apparatus to produce Graphene (rGO) using Graphite oxide that prepared from graphite. The apparatus was mounted to produce graphene at graphite industry.

Technology Overview:

Producing Graphene or rGO from GO using normal or microwave oven results short circuiting and breakdown due to conductivity. Also reductive environment and fast heating are not possible either. The novel apparatus allows fast heating using thermal convection method avoiding short-circuiting. Gas inlets/outlets, impeller fan, and cut off mechanism avoids energy and time waste.

Potential Application:

Energy Storage Devices, Electronic Industry, Transport and Construction Industry, Bio-medical Applications, Advanced Materials, Sensors.

Advantages of the Products:

- High Surface Area - *ca.*500 m²/g
- High Conductivity - *ca.*833 S/m (at 0.8 MPa)
- High Graphitic Carbon(*sp*²)- *ca.* 92%
- Large Lateral Size (D50)- *ca.* 45 μm
- Low Bulk Density - *ca.*0.02g/cm³

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