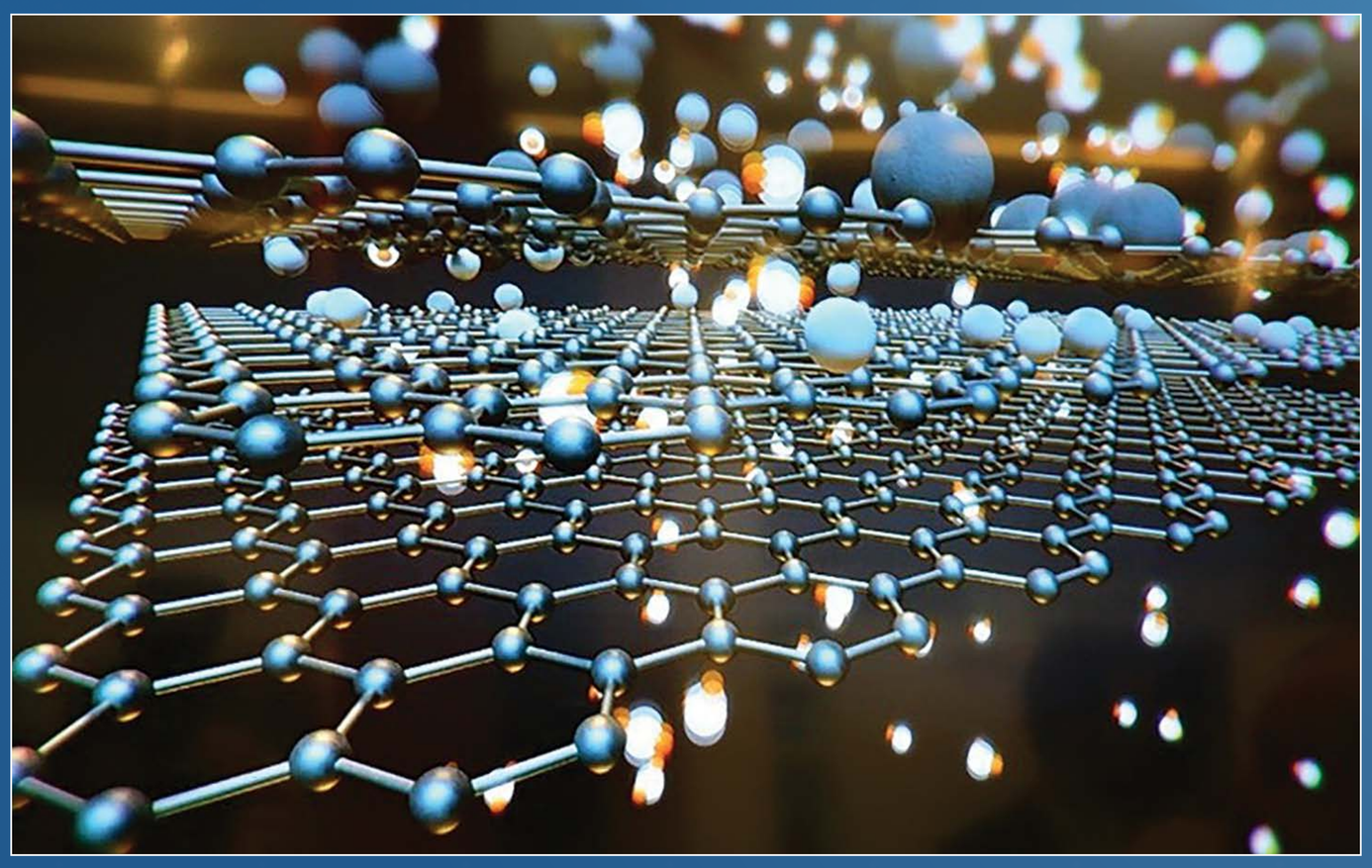
NETL-SUPPORTED TECHNOLOGY TRANSFORMS COAL AND COAL-WASTES INTO NANOMATERIAL 200 TIMES STRONGER THAN STEEL

Production of high-quality graphene on a large scale at a low cost could enable new and disruptive applications for the nanomaterial.



Graphene consists of tightly bonded carbon atoms arranged in a hexagonal lattice.

NETL supported Universal Matter in demonstrating a breakthrough graphene production technology called Flash Joule Heating (FJH), which can transform diverse carbonaceous material feedstocks — including coal and coal-wastes — to low-cost, high-quality graphene.

- Graphene is a versatile carbon-based nanomaterial that is 200 times stronger than steel and can stretch up to 25% of its original length.
- Graphene is more electrically conductive than copper, possesses extremely high thermal conductivity, and is stronger (tensile strength) than any known material.
- The high quality and low costs of the graphene produced by FJH could enable the electronics, steel, aluminum, concrete, and plastics industries — among many others — to develop new and disruptive uses for graphene.

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