

POSCO Leads Creation of Graphene Ecosystem to Meet Growing Demand



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South Korea's top steel group POSCO will lead the creation of a graphene ecosystem in the southeastern industry port of Pohang in cooperation with research groups and Graphene Square, a high-tech startup, to meet the growing demand in the fields of semiconductors, electronics, electric batteries and composites.

[POSCO](#) said it has signed a business agreement with Pohang City, the Research Institute of Industrial Science & Technology ([RIST](#)), Pohang University of Science and Technology ([POSTECH](#)), and [Graphene Square](#), which is developing systems for the mass production of large-scale graphene synthesized by chemical vapor deposition (CVD), an effective way to produce high-quality graphene on a fairly large scale.

RIST supports engineering to build mass-production facilities. POSTECH supports the analysis of graphene-applied products. The National Institute for Nanomaterials Technology standardizes international authentication methods for graphenes and applied products. Graphene Square will establish a demonstration plant for the production of prototypes.

Graphene is a crystalline allotrope of carbon with two-dimensional properties. The single, thin layer of graphite is a transparent and flexible conductor that holds great promise for various material and device applications, including solar cells, light-emitting diodes, touch panels and smart windows or phones. Graphene can be chemically processed into various forms.

In May 2020, the state-run Korea Research Institute of Chemical Technology ([KRICT](#)) opened the way for the mass-production of high-quality industrial graphene, an atomic-scale honeycomb lattice of carbon atoms, in powder form without treating graphite as a strong acid.

Scientists have tried to develop reliable, cost-effective and facile processes for the fabrication of graphene electrodes with good performance. In 2017, Samsung's research wing developed

a "graphene ball" that would help batteries charge faster than lithium-ion batteries.

Read the [original article](#) on AJU Business Daily.