

Press Release

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To whom it may concern



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Obtaining a License for Graphene Manufacturing Technology from the University of Tokyo, to Start the Sample Provided

ADEKA Corporation (Representative Director and President: Akio Kohri) has obtained an exclusive license for the graphene manufacturing technology developed by a research group at the University of Tokyo, thereby starting to provide graphene samples for users in earnest.

This technology produces highly concentrated, high-quality graphene with a high yield in a short period of time. The graphene dispersion liquid produced by this technology is approximately 20 times higher in concentration than dispersion liquid produced by the conventional technology and has the world's highest level of concentration. We have also established a technology for removing ionic liquid in order to provide graphene in powdered form. Graphene powder can be returned to high-quality graphene by using a simple method in accordance with the purpose.

There is a method for manufacturing graphene by connecting carbon atoms through chemical vapor deposition (CVD). Although this method produces extremely high-quality graphene, it is not suited for mass production and therefore limited in use. In contrast, the newly developed method, which produces graphene by exfoliating graphite, is capable of providing a stable supply of graphene in large quantities. In addition, this method produces graphene by irradiating microwaves in ionic liquid, whereby enabling the manufacture of high-quality graphene without chemical treatment.

ADEKA Corporation has been providing small amounts of graphene dispersion liquid and powdered graphene to a limited number of customers. To meet the growing market needs we will start providing samples for users in earnest. Going forward, we will expand the use of graphene in a wide range of areas—including electrodes for energy devices and resin sheets/films—with the aim of starting commercial production by 2020.

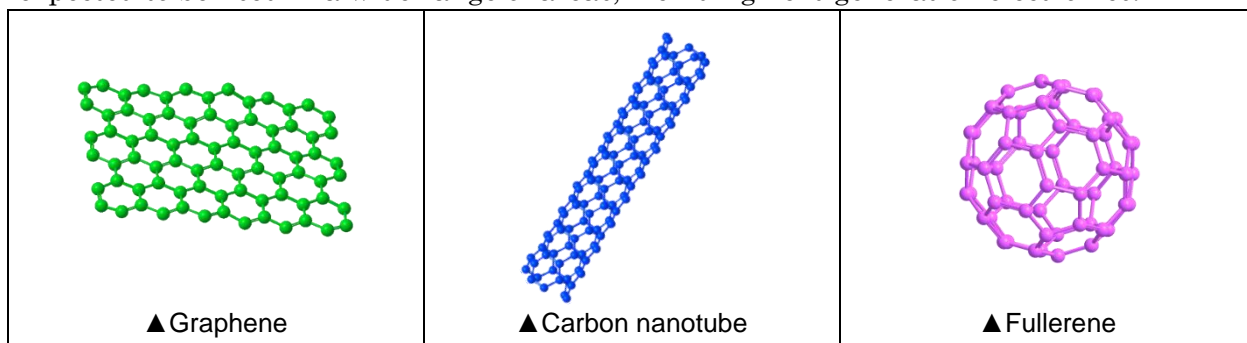
Reference

- “A Major Breakthrough for the Mass Production of Graphene, the Miracle Material,” online press release, School of Engineering, the University of Tokyo, August 10, 2015.
<https://www.t.u-tokyo.ac.jp/epage/release/2015/20150810003.html>

A research group at the University of Tokyo’s School of Engineering, led by Professor Takuzo Aida of the Department of Chemistry and Biotechnology and composed of Michio Matsumoto and other graduate students, developed a method for exfoliating natural graphite into single-layer, high-purity graphene with high efficiency in a short period of time (30 minutes) by combining newly synthesized ionic liquid and microwave irradiation. Their research paper was published in Nature Chemistry, a prominent British academic journal of chemistry.

■ Graphene

Graphene, which consists of flatly bonding carbon atoms with a thickness of an atom, is used as nanocarbons, such as carbon nanotubes and fullerenes. It has characteristic electrical conduction, thermal conductivity and mechanical strength. It is a “miracle material” that is expected to be used in a wide range of areas, including next-generation electronics.



■ The appearance of the sample



▲ Graphene dispersion liquid



▲ Powdered graphene

■ Applications



▲ Resin sheet of graphene additives