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Japan Material Technologies Corporation

JMTC's MXene product development project has been selected for a Tokyo Metropolitan Government grant

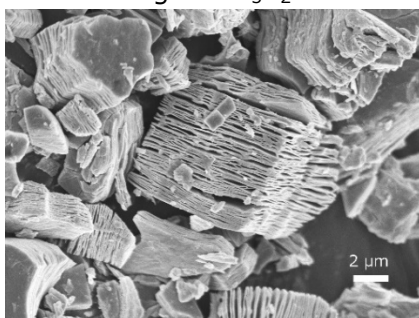
～Promoting development of a new conductive auxiliary agent for electric vehicle LIBs～

Japan Material Technologies Corporation (Head Office: Chuo-ku, Tokyo; President: Koyu Urata; "JMTC") has been selected by the Tokyo Metropolitan Small and Medium Enterprise Support Center for the "2022 TOKYO Strategic Innovation Promotion Project" ("the Project").

The purpose of the Project is to promote entry into growing industrial fields and revitalize Tokyo's industries by supporting the development of technologies and products that small and medium-sized enterprises in Tokyo aim to commercialize with their core technologies as well as outside knowledge and know-how based on the "Innovation Map". With the joint research system with Professor Kiyoshi Kanamura of Tokyo Metropolitan University, JMTC applied for and was selected for the Project with the research and development theme of "Development of a new conductive auxiliary agent for electric vehicle LIBs". This will promote the development of MXene*, a two-dimensional layered compound handled by JMTC.

Currently, nanocarbon materials such as graphene and carbon nanotubes are being considered as high-performance conductive auxiliary agents for LIBs, etc. (lithium-ion batteries and next-generation batteries), but because the properties of MXene can be finely controlled by combining elements, it is expected to further improve battery performance compared to nanocarbon-based conductive auxiliary agents. With this grant, JMTC will accelerate the development of MXene optimized for LIBs, etc., together with Tokyo Metropolitan University, aiming to realize faster charging and discharging and longer life of LIBs, etc., and to contribute to the spread of electric vehicles.

<SEM image of Ti_3C_2 MXene>



<Sample of Ti_3C_2 MXene>



*MXene is a two-dimensional layered compound consisting of transition metals (such as titanium and vanadium) and light elements (carbon or nitrogen), announced in 2011 by a research team at Drexel University in the United States. The Ti_3C_2 MXene, currently marketed by JMTC, has conductivity equivalent or superior to that of nanocarbon materials, as well as dispersibility superior to that of carbon-based materials. JMTC promotes the development of this material while also utilizing industry-academia collaboration with Drexel University, including a non-exclusive license for research and development use of the patent owned by Drexel University in Europe and the United States.