JMTC

NEWS RELEASE

September 15, 2022
Japan Material Technologies Corporation

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

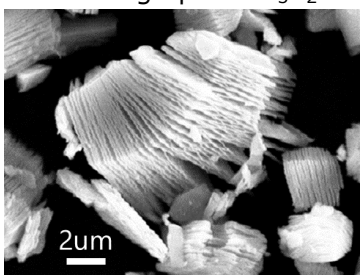
~Promoting development of highly concentrated dispersions of novel nanomaterials for high-performance batteries~

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 New Product and New Technology Development Subsidy Program" ("the Program").

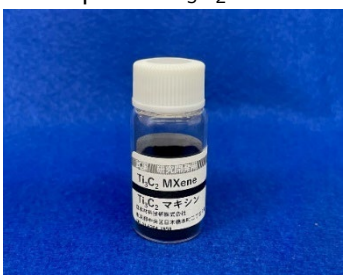
The purpose of the Program is to promote the strengthening of technological capabilities and the development of new business fields and to revitalize Tokyo's industries by providing subsidies to small and medium-sized enterprises in Tokyo for a portion of the expenses required for research and development of new products and technologies. JMTC applied and was selected for the Program for R&D for the "Development of highly concentrated dispersion liquids of new nanomaterials for high-performance batteries". This will help develop high-concentration dispersions of Ti_3C_2 MXene, a two-dimensional layered compound handled by JMTC.

Announced by a research team at Drexel University in the United States in 2011, MXene is a two-dimensional layered compound consisting of transition metals (titanium, vanadium, etc.) and light elements (carbon or nitrogen) and has equivalent or greater conductivity than that of carbon-based materials. Currently, conductive nanomaterials are being examined as high-performance conductive auxiliaries for lithium-ion batteries and next-generation batteries. However, carbon-based materials such as graphene and carbon nanotubes have strong aggregation properties and require large amounts of dispersants, which reduces the degree of freedom in electrode design. By accelerating the development of highly concentrated dispersions of MXene nanosheets with this grant, JMTC aims to expand the possibilities of electrode design and contribute to higher battery performance.

<Electron micrograph of Ti_3C_2 MXene>



<Sample of Ti_3C_2 MXene>



JMTC works on the commercialization of innovative technologies developed by Japanese companies, universities, and research institutes through license-outs and carve-outs, and has been actively involved in social implementation of innovative inorganic materials such as negative thermal expansion material BNFO and up-conversion inorganic nanoparticles. JMTC will continue the efforts to enhance the functionality of inorganic materials and promote the commercialization of underutilized technologies, eventually contributing to innovation in the energy and electronics fields.