

November 1, 2022

Japan Material Technologies Corporation

License Agreement with Drexel University for MXene

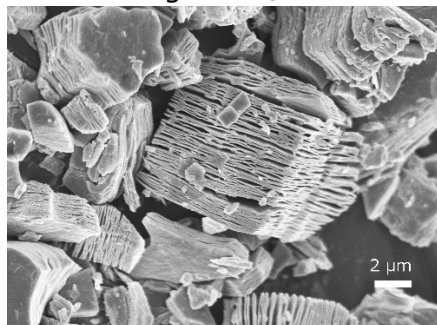
Japan Material Technologies Corporation (Tokyo, Japan, hereinafter referred to as "JMTC") has entered into a non-exclusive license agreement with Drexel University (Philadelphia, PA, US), which holds the basic patent of two-dimensional nanocrystals, MXenes, in US, Europe, and China.

The agreement is a non-exclusive license agreement that authorizes JMTC to make, have made, use, import, offer for sale and sell MXene materials for educational and research use only, in the United States, Europe, and China. MXene was developed by a research team in Drexel University's College of Engineering in 2011.

JMTC started developing its own industrial manufacturing process of Ti_3C_2 MXene in 2019 and has been selling samples since 2020. Since then, JMTC has focused on the domestic market of Japan where Drexel University's patents are not covering. Based on the license agreement, JMTC's samples will be available for research and development to academic or industry research institutes globally.

The licensed substances are two-dimensional metal carbides (nitrides) with the general formula M_{n+1}X_n (e.g. Ti_3C_2 , Ti_3CN , V_2C , Nb_2C , etc.) and metal carbides (nitrides) consisting of two metal elements with the formula $\text{M}'_2\text{M}''\text{X}_{n+1}$ (e.g. Mo_2TiC_2 , Mo_2VC_2 , Cr_2TiC_2 , etc.). Dispersions of these substances, resin composites, storage batteries, electronic devices, etc. are also included in the list of licensed substances.

<SEM image of Ti_3C_2 MXene>



JMTC will continue to accelerate development of inorganic materials and contribute to innovation in the electronics and energy fields. As a fabless start-up specializing in organic, inorganic and bio-chemical materials, JMTC will continue to contribute to the creation of innovation in Japan's materials industry by promoting the commercialization of innovative material technologies that have yet to be implemented in society.