December 16, 2019

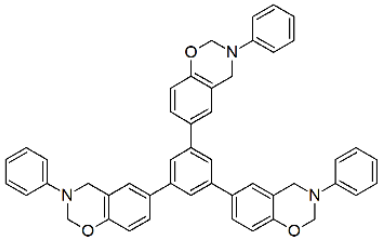
JMTC and JSR concludes an exclusive licensing agreement for trifunctional benzoxazine and its hardened materials

Japan Material Technologies Corporation (JMTC; Head Office: Chuo-ku, Tokyo; CEO: Koyu Urata) is pleased to announce that JMTC has concluded an exclusive licensing agreement (hereinafter referred to as "the agreement") for trifunctional benzoxazine (hereinafter referred to as "the monomer") and its hardened materials with JSR Corporation (JSR; Head Office: Minato-ku, Tokyo; Representative Director, President and COO: Nobuo Kawahashi).

The monomer which is subject to the agreement is a benzoxazine with a star-shaped structure that has three oxazine rings around a benzene ring, developed by JSR. Benzoxazine is a generic name for cyclic monomers with which ring-opening polymerization proceeds with no catalyst when heated and polybenzoxazine which is low-shrinkage curable thermosetting resin is derived. Polybenzoxazine is also known as "novel phenol resin" as it forms a similar network structure to phenol resin due to cross-linking reaction. In addition to heat resistance, flame retardance, electrical properties and dynamic characteristics similar to phenol resin, polybenzoxazines have excellent low-hygroscopic, low-dielectric and low thermal expansion characteristics. Due to such excellent characteristics, the material is put into commercial application in matrix resin of carbon fiber reinforced plastic (CFRP) used on aircrafts as well as thermosetting resin modifiers used in electronic components. The monomer is expected to derive thermosetting resin with higher heat resistance, as high crosslinking proceeds due to ring-opening polymerization of its three oxazine rings and polymer network that has plenty of intermolecular hydrogen bridges and intramolecular hydrogen bonds is formed.

JMTC will utilize the exclusive license acquired through the agreement to supply the monomer to mainly composite materials manufacturers and thermosetting resin manufacturers, and realize early commercialization.

<Structure of the monomer>



JMTC has been engaged in the commercialization of highly heat-resistant resin materials such as BNFO negative thermal expansion material, highly heat-resistant low-chlorine epoxy resin and double-decker silsesquioxane. Market needs for highly heat-resistant resin materials are rapidly increasing and diversifying, as seen with flame retardance and high heat resistance of composite materials using carbon fiber and low dielectricity of electronic components for 5G (fifth-generation mobile communication system). JMTC intends to continue actively engaging in commercialization of unique highly heat-resistant resign materials.

JMTC is a fabless startup company specializing in the field of functional materials. The company is focused on the use of licensing agreements and carve-outs to commercialize new materials technology developed but not yet commercialized by Japanese corporations as well as universities and research institutions. Since its establishment, JMTC has adopted technologies for organic materials, inorganic materials and biochemicals from five companies and two universities. JMTC will continue to contribute to creating innovation in the materials industry in Japan by commercializing unutilized technologies developed by companies.