

Innovative Manufacturing with 3D Printing

Chemicals. Materials. Technology. Processes.



Adding Value for Engineering, Product Design, Manufacturing and Architecture.

The Mitsubishi Chemical Corporation, with its several Regional Headquarters, has the organisation and infrastructure to realise local and global synergies among the vast network of Mitsubishi Chemical affiliate companies. With over 40,000 employees at 358 affiliates in 30 different countries, Mitsubishi Chemical can now provide innovative solutions more effectively for customer applications.

Thanks to the intensified collaboration and experience, Mitsubishi Chemical group companies are uniquely positioned to meet the changing demand of key industries including automotive, aerospace, medical, packaging, building and construction and many others. Most of our served industries by highly advanced conventional production methodologies have all added 3D printing as a new extended method to manufacture in a different and beneficial way.

The quickly changing 3D printing market needs strong global partners with a sustained commitment to the 3D printing Industry. Mitsubishi Chemical is a truly global company with manufacturing facilities all over the world, our extensive knowledge in Chemical Science in combination with our long-term strategy of further investments in 3D printing are mandatory ingredients of lasting partnerships in the 3D printing market.

Our 3D Printing commitment

Our aim is to continue to develop and extend our product offerings for the 3D Printing Market.

Short summary

1. FFF (FDM) | we started –via acquisition– and became the leading European provider of a large range of high-quality filaments and now this business extended its success to the Americas with own 3DP support, developing and manufacturing sides. In collaboration with our FFF partners we continue to improve quality and add new materials including bio based and biodegradable grades.

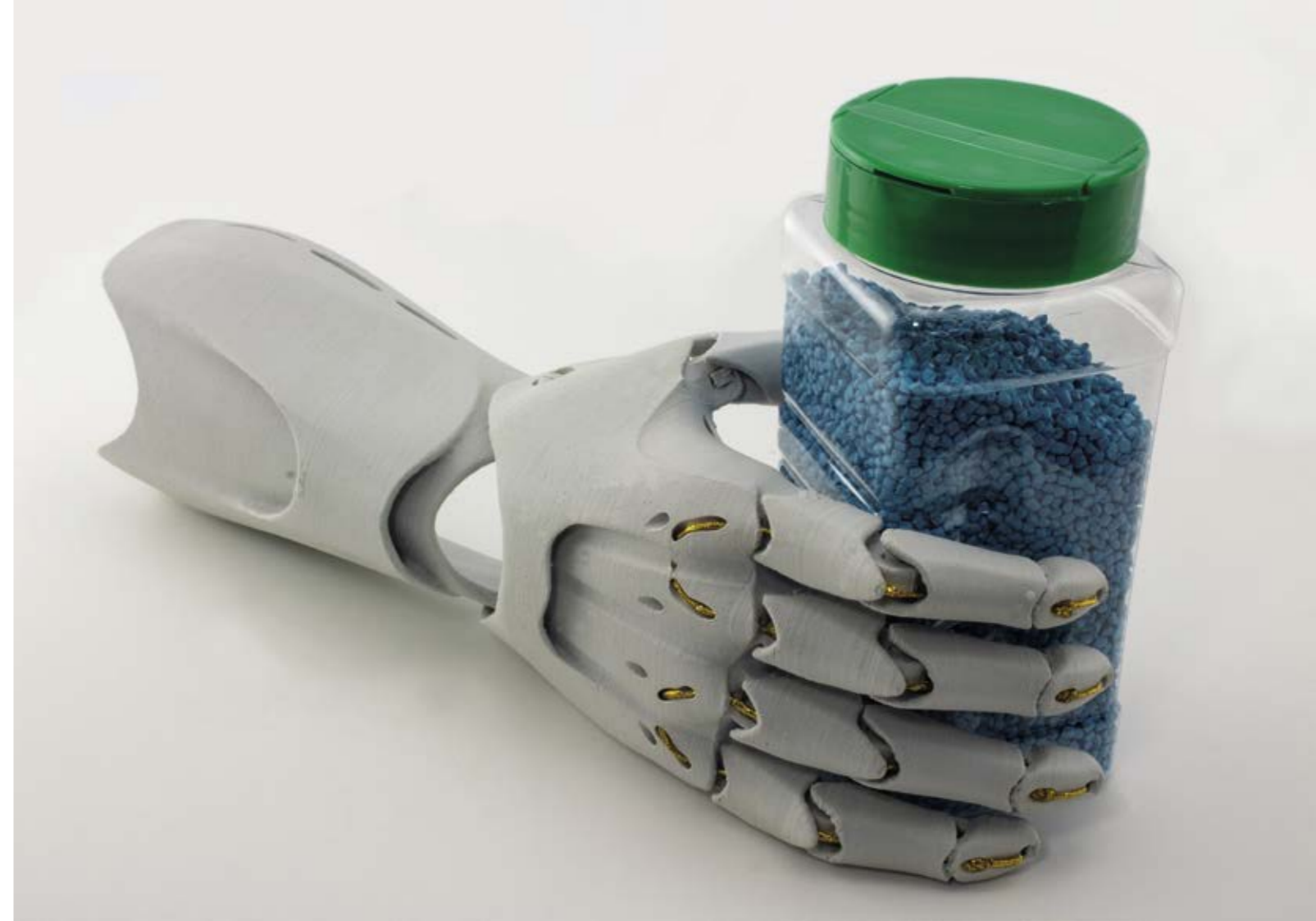
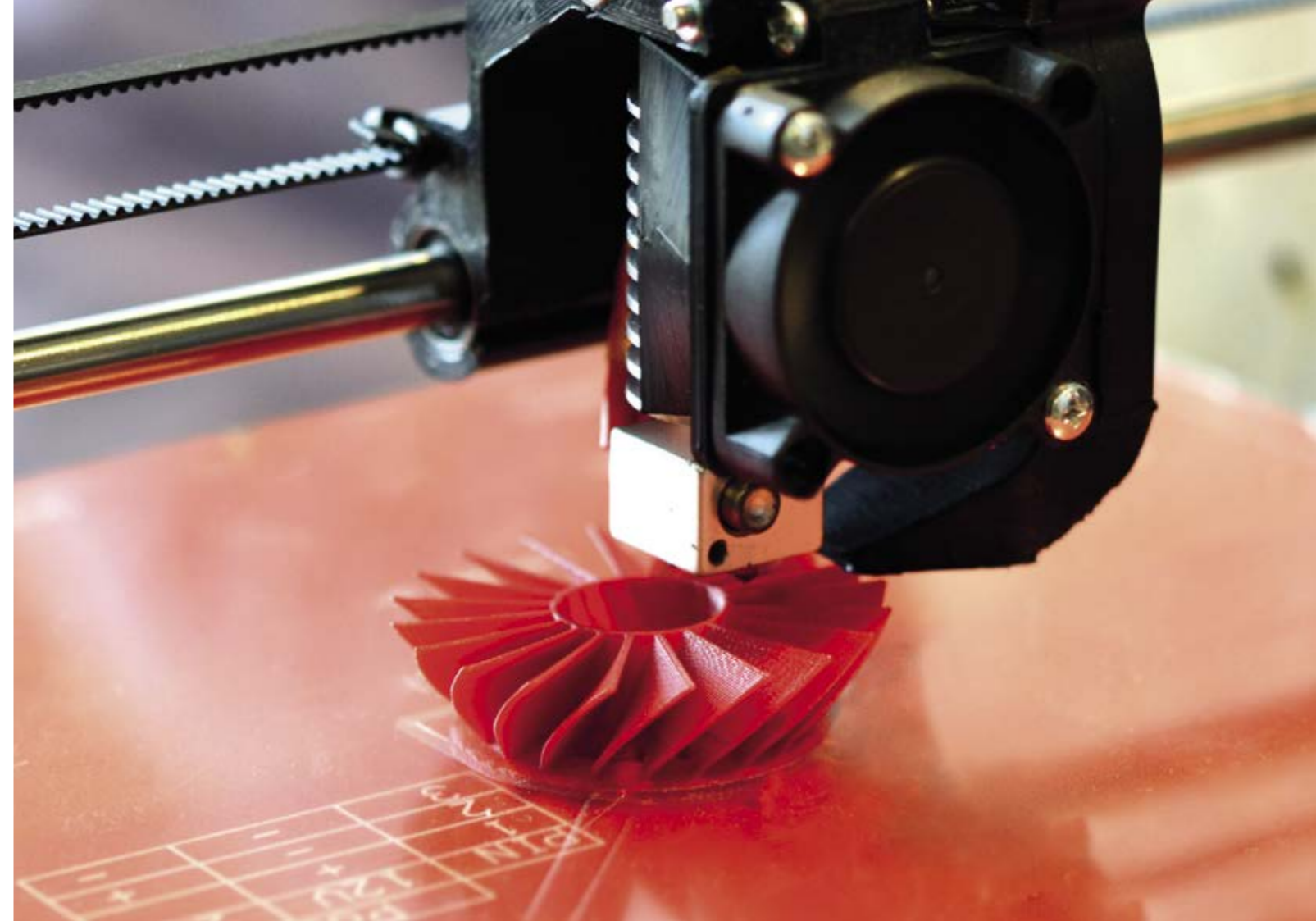
2. FGF | we started – via investment and developing support – our partner Colossus 3 D Pellet printing with their 20ft Container size printers. Now available a range of different FGF optimized pellets, including our worldwide known sustainable material DURABIO™.

3. SLA/DLP | Mitsubishi Chemical, our group companies and business partners collaborate in several Joint Development Programs and soon offer a range of High-performance resins designed for multiple applications.

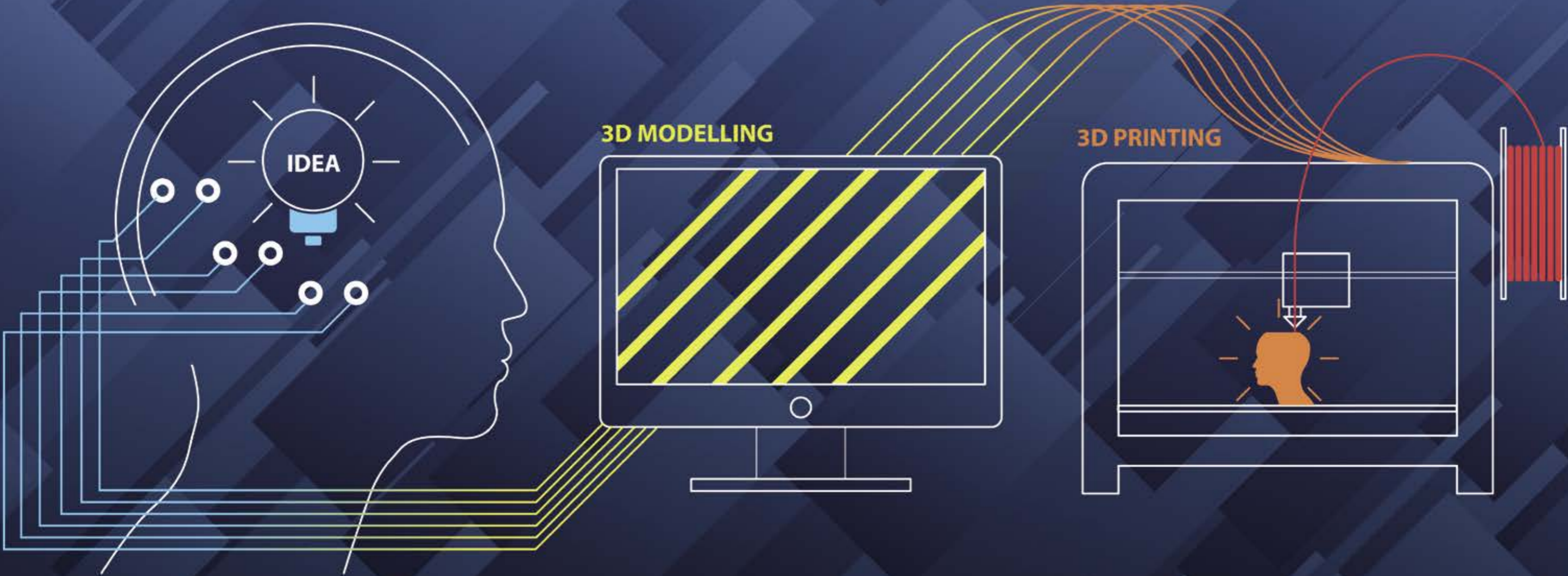
4. SLS | We have started via Joint Development Programs specific high performance SLS Powders with excellent properties and soon offer these to our worldwide customer base.

5. FIM | Freeform Injection Molding makes use of a 3D Printed Mold ready for high precision injection molding, after molding the Mold can be easily dissolved in water. We have started to support this technology process via investment and will show it during the FORMNEXT 2019.

Partnering is at the core of our focused 3DP strategy. We would welcome business partners in research, development, distribution, software applications, printing services and 3D printer technology companies. We recognise that the key to growth is a good collaboration among a network of excellent partners. Mitsubishi Chemical is planning to open a new regional innovation centre to provide the best possible service for our customers.



Mitsubishi Chemical's Roadmap for the 3D Printing industry



Mitsubishi Chemical has firmly chosen to support 3D printing with material developments for existing and upcoming new 3DP technologies on the market. As of today, we offer a portfolio of polymers in filaments (FFF) and granulates (FGF) and toll manufacture these materials for Private Label Distributors, Corporate

Industrials, 3D printer companies and large OEMs/Tiers. Our business domains are also developing a range of UV resins (SLA/DLP) and PMMA powders (SLS), and we have already started shipping to large 3D printer companies.

In the next few years, we expect to significantly expand on the number of solutions we offer, and will make our products available globally with consistency and top class quality.

Materials. Machines. Applications. Services.

Our strategy is not only to develop basic chemicals and polymers (liquid, pellets, powder) but to offer business partners a wide variety of 3D printing materials with different material characteristics to support diverse applications. Mitsubishi Chemical's Advanced Polymer Business Domain is coordinating and taking leadership in the area of 3DP materials on a global basis. Furthermore, we will continue to invest and develop in several business partners in the fields of 3DP machines, 3DP applications and 3DP services. Strong collaboration with business partners is necessary to enable us to work at speed in the fast changing 3DP markets.

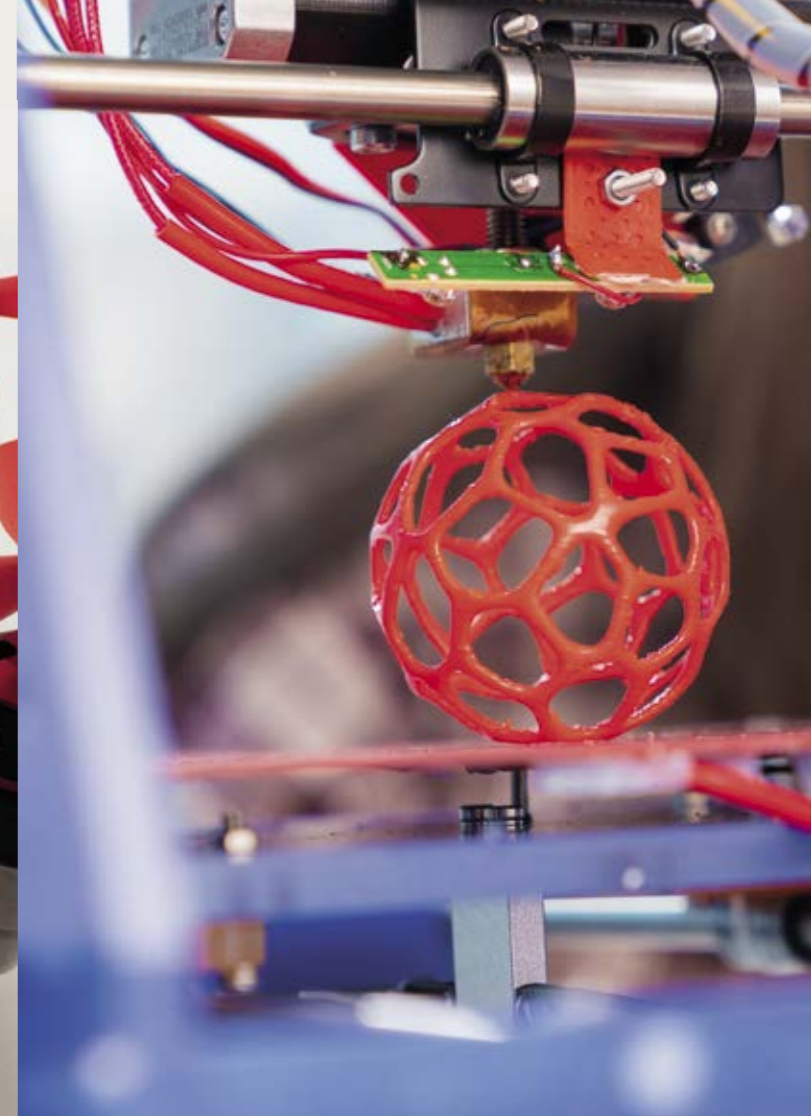
Partnerships.

Mitsubishi Chemical Holdings Group looks for future 3DP technology partnerships that can contribute to the growing opportunities in 3DP manufacturing. We see it as a method of manufacturing which can be disruptive in many ways and is highly efficient at the same time. This fits to our Vision "Realizing KAITEKI". The sustainable well-being of people, society and our planet Earth – we call it **KAITEKI**.

Research and Development.

We can now combine our teams in molecular and functional design technologies and utilize our special knowledge of analysis, synthesis of inorganic and organic polymers, mechanical design and control engineering, product evaluation and safety evaluation and simulation.

In doing so, we embrace innovation and work closely with our customers and business partners to support the fast-changing market demands in all industries. This is especially true with 3D printing where we are increasingly receiving requests through our different Business Domains and a wide area of industries for our special materials.



Supporting the world of 3D Printing with a
fully integrated and independent supply chain



Mitsubishi Chemical Corporation
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KAITEKI Value for Tomorrow

Mitsubishi Chemical Holdings Group

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