Technical Newsletter
Vol. 57

Micro MIM Europe GmbH

【2025 Year in Review】TOP 3 Most Popular Technical Topics Among Our Readers!

As the year draws to a close, we hope this message finds you in good health and continued prosperity. We sincerely appreciate your generous support and patronage throughout the year. We are deeply grateful to all readers who have followed our Technical Newsletter over the past year. From the cutting edge of MIM (Metal Injection Moulding) technology to the latest industry trends in metal 3D printing, we have strived to deliver the "now" of technology to your inbox. This final newsletter of the year is presented as a "Technical News Year in Review" — announcing the topics that captured the most reader interest throughout 2025! This ranking condenses the technologies our customers most want to know about right now, and should offer valuable hints for product development and supplier selection in the coming year.

If any of the technologies covered have sparked your interest, or if you have questions, please do not hesitate to reach out. We would be pleased to provide proposals that address your specific challenges. In 2026, we will continue to move forward as a technology partner supporting your manufacturing endeavors.

1st Place: Vol. 53 — Trends in Metal 3D Printing as Seen from a Metal Injection Moulding Manufacturer's Perspective

This issue presented a field report from "RAPID + TCT 2025 Detroit," the largest additive manufacturing (AM) exhibition in North America. It introduced the current shift of 3D printing from prototyping toward full-scale production use. The exhibition featured 500 exhibitors and 15,000 visitors, with approximately 140 presentations across 8 sections covering sectors such as aerospace and healthcare. Notable topics included: large-scale fabrication such as an Inconel exterior component measuring ϕ600mm × 850mm in height; high sintering density achieved through dispersed spot scanning; and advances in new powder development and powder recycling technology. In particular, a dominant trend was observed in beam-based (in-situ sintering) AM presentations. A highlighted talk reported achieving 99.9% density in tungsten using high-power E-PBF and specially coated powder. The issue also expressed our commitment as a MIM manufacturer to continuing to explore the potential of 3D printing technology.

2nd Place: Vol. 55 — MIM Manufacturing Supported by Powder and Kneading

This technical overview focused on "powder" and "kneading" — the core technologies that determine product quality in MIM. It emphasized that MIM uses metal powder with an average particle size of 8μm, and that uniform kneading is the heart of manufacturing. The issue introduced oil absorption measurement based on JIS standards as an effective on-site method for evaluating metal powder surface area and determining resin compounding ratios. Oil absorption measurement is a method that intuitively detects surface wetting by observing the transition of powder into a glossy, uniformly oil-coated mass. In-house experiments showed that larger average particle sizes in SUS powder resulted in lower oil absorption, providing useful insight for optimizing resin addition levels. Furthermore, as a new approach to evaluating feedstock (FS) kneading quality, thermal conductivity and volume resistivity measurements were introduced alongside conventional fluidity measurements. In particular, the volume resistivity method was shown to be a simple yet quantitative means of assessing kneading quality, with potential as a key evaluation tool going forward.

3rd Place: Vol. 52 — Report from World PM2024

This issue reported on our participation in "World PM2024," the international powder metallurgy conference held in Yokohama. Our company presented oral papers on MIM technology achieving both improved tensile strength and maintained elongation in molybdenum (Mo)-added pure titanium, as well as research into manufacturing biocompatible tantalum (Ta) components via MIM and LMM-AM. The conference also introduced a superheated steam (SHS) debinding technology that reduces debinding time to one-tenth of conventional methods. Industry trends highlighted included a shift away from dependence on the automotive industry, and growing applications in medical and aerospace sectors. In the additive manufacturing (AM) field, a notable point was that sinter-based AM technologies — which require a post-forming debinding and sintering process — demonstrated a stronger presence than beam-based technologies.

In Closing

In 2026 as well, we will continue to share technological innovations with you and press forward as a technology partner dedicated to solving challenges together.

We warmly welcome specific requests from our readers for next year's newsletter — whether topics you would like us to explore in greater depth, or challenges you are facing in product development. Please share with us what you want to know. Finally, we sincerely wish you and your organization a year of even greater prosperity and fulfillment in the year ahead.

December 2025

Upcoming Exhibitions

- **MD&M West 2026**

Feb 3–5 | Anaheim | Booth #3499

- **Medtec Japan 2026**

Apr 21–23 | Tokyo | Hall E7- Booth #309/#409

MD&M WEST

Japan Medtec