

MIM surges forward

What downturn? The metal injection moulding (MIM) industry is flourishing, with high demand for jobs, products and materials. Look for growth to come largely from developing markets, says Anita Shaw...

While businesses are eager to embrace the idea of an economic recovery, not all are experiencing the reality just yet. The downturn of economies across the globe over the last few years has left many firms and industries rethinking their strategies and retooling their approaches.

For some, however, the economic recovery is in full bloom, with stock depleted, jobs returning and product and material demand high. The metal injection moulding (MIM) industry is one such segment, enjoying a return to prosperity and the positives and challenges that go with recovery.

The global view

According to a report from Global Industry Analysts, a worldwide business strategy and market intelligence source, released in August 2011, the combined metal and ceramic injection moulding

market will be worth US\$3.7 billion globally by 2017. The report, "Metal and Ceramic Injection Moulding: A Global Strategic Business Report," stresses that the success of both industries is directly linked to the manufacturing industry, "particularly in the automotive, aerospace, medical/health care, mechanical and IT sectors." These sectors were impacted by the global recession, and the future is directly linked to the overall economic recovery.

The metal injection moulding market is dominated by Asia-Pacific and Europe, while the US is the significant player in the ceramic injection moulding market. The automotive business is still the leading segment for MIM, but options have lessened as that industry has suffered.

"The slumping automotive industry, with specific reference to the US, has impacted opportunities in this application market in North America," reports Global Industry Analysts. "Pressure from the recession, which severely impacted

most industrial sectors, has forced growth to slow down in the medical/healthcare industry, which was once widely opined to be recession resilient."

However, the future is promising. According to Global Industry Analysts, "major technological advancements are paving the way for market growth," with miniaturization being one notable trend. "The growing trend towards miniaturization, and the design engineers' quest for developing newer components with greater mechanical strength, provides opportunities galore for technologies such as MIM and CIM," the group reports.

In the down economy, production diminished as excess product was available. However, as economic conditions have improved and capacity has dwindled, companies in these market segments are adding staff and gearing up to meet demand for products. "In the post-recession period, refocus on increased productivity and capacity requirements



Figure 1: San Diego hosts this year's MIM show.

MIM2012: Technology for a thriving future

San Diego (Figure 1) is still considered one of the most livable cities in the US, with its temperate weather, proximity to the ocean and plethora of things to do for people of many interests. In March, the city will host an event that will take a closer look at an industry that also continues to reflect many positives and looks ahead to a future of growth with great anticipation.

The Metal Injection Moulding Association, a trade association of the Metal Powder Industries Federation (MPIF), is co-sponsoring the MIM2012 International Conference on Injection Moulding of Metal, Ceramics and Carbides with its affiliate APMI International. The three-day event is filled with technical conferences that reflect on where the industry started, and, more importantly, where it is headed.

The conference, which runs 19-21 March at the Sheraton San Diego Hotel & Marina, has a focus on “designing MIM parts and materials for performance and value.”

The PIM industry – which is comprised of MIM (metal injection moulding), CIM (ceramic injection moulding) and CCIM (cemented carbide injection moulding) – “has realized major technological advances and overcome numerous business challenges,” the association reports, “and the objective of the conference is to continue to explore these advances, assist in the transfer of technology and investigate new developments in the field of powder injection moulding of metals, ceramics and carbides.”

“Each year, Randall German, FAPMI – who is probably the most recognizable person in the MIM industry – starts the conference with an optional tutorial that is very thorough,” notes Jim Adams, director of technical services, Metal Powder Industries Federation. The course that German presents provides a basis for determining options, uses, properties, applications and opportunities for cost-effective PIM manufacturing, according to the association. In addition, German will review

new application, emerging markets and examples of products that were “never thought possible in net-shape manufacturing until PMI.”

A small networking reception closes the day and officially kicks off the event.

Tuesday, March 20, is a busy day for attendees, with a full day of presentations lined up, including a metal powder history lesson from German as well as a review of powders for the MIM industry from Tim McCabe of Kinetics Climax Inc.

The Keynote Luncheon Speaker at this year’s event is Joseph J. Zajk, Chief Engineer - Pistols, from Sturm, Ruger & Co., who will present “Ruger, Investment Castings and MIM: How a Firearms Company Has Utilized MIM to Complement its Investment Casting Expertise.”

As one of the preeminent firearms companies in the US, Sturm, Ruger & Co. has long used precision investment casting as its technology of choice for producing small, intricate components. However, trends in recent years toward smaller firearms designs with smaller, more intricate parts have made investment casting these components problematic. Ruger has turned to MIM as a solution to complement its investment casting expertise. Zajk will present some of the company’s challenges, successes and experiences with MIM.

“Having someone from the handgun industry, which is one of the top three areas that MIM is involved in, is something very unique for us,” notes Adams. After the afternoon sessions, a 10-minute exhibitor infomercial will arm visitors with information about the 25 or so tabletop exhibitors they can visit during the evening’s networking reception.

A full-day of technical conferences on Wednesday, March 21, features speakers from a number of European nations, who will give their perspective on the industry.

Overall, Adams is expecting another strong event this year, with leaders in the MIM industry presenting and about 130 attendees.



Figure 2: Javier Martinez from Metallied.

in key end-use markets will push demand for MIM and CIM parts as manufacturers begin channeling investments for global competitiveness,” the group offers.

The group adds that the future success of both industries is likely to be “in the hands of emerging countries – particularly those in Asia – which recovered quickly from the recession and are undergoing more industrial development than the developed world.”

Growth in the metal injection moulding industry is expected to come largely from developing markets such as Taiwan, Malaysia, Indonesia, Mexico and India, among others, according to the report data. Pricing pressures are expected to emerge as these countries further their development in this area.

North American spin

Though Global Industry Analysts believes increased global competition will result in pricing pressures and some company consolidation in the next five years, the issue is not currently one of the leading concerns for North American companies involved with metal injection moulding. Instead, supply and lead times, raw material costs and finding skilled labor are the significant issues right now.

“One of the biggest problems we’re having is the lead time on materials – several months, sometimes up to six months lead time,” stresses Ron Peterson, vice president, Ryer, Inc. He notes that several companies are addressing the issue by planning and building facilities to increase production, “so manufacturers are helping to get the powders down to a reasonable lead time.”

“Powder supply over the last year has been an issue,” adds Matt Bulger, gen-