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SPECIAL FEATURE

PM: the way forward

Liz Nickels

In January the European Powder Metal Association (EPMA) set out its Road Map, a document focusing on improving awareness and R&D in the powder metal industry up to 2025. *Metal Powder Report* spoke to Jonathan Wroe, executive director of the EPMA, about his view of the industry and what could happen over the next ten years.

How is the industry in Europe? Is it still bouncing back from 2008?

In terms of volume we're pretty much back to where we were in the peak years before the crash, i.e. 2006/7. However, industry is different now. There has been rapid development in new industry sectors – in particular the HIP [hot isostatic pressing] side, and additive manufacturing [AM]. These markets are still rather small but in terms of the level of interest being generated and the new opportunities being presented, they are very interesting to me.

However, in general, my feeling is that things are not growing that quickly at the moment. I've seen several companies reporting figures that are the same, or are not much higher, than last year's figures. There has been talk of financial headwinds, and so on. Moreover, there has been a lot of uncertainty, financially speaking, with regards to crisis in Greece and the drop in the Chinese markets. But certainly, most parts of the industry are reasonably healthy and at the moment continue to be so. Statistics I've seen this year shown the industry at plus or minus 5% of where we were last year.

What developments have there been in HIP?

There are two things in HIP technology that in my opinion offer good scope for development. The technology has got many end users in the energy sector, particularly the oil and gas industries, and also on the aerospace side. Long term, both these markets offer major opportunities for the HIP industry.

I also believe that HIP is going to play an interesting role in the development of additive manufacturing, depending on which additive technique is being used. A lot of AM parts will need some secondary finishing in order to bring them up to the structural integrity level required in the market. This could be a very good opportunity for HIP to piggyback on some of the developments that come through from AM. That, again, is potentially is going to be a very interesting area.

Euro PM's Young Engineers Day was very successful last year. Is a main focus of the EPMA's role to promote PM to younger engineers?

Yes – following some discussion at the EPMA Council we felt that we needed to do more in that direction.

While for many years now we have held our popular EPMA Summer School short courses, we realised there was an additional need to focus on young people who have not yet decided about being involved with PM. However, there is also a need to educate people who are already involved in some way in PM, such as material scientists and engineers. It's a good way for them to see that it is a growing industry with good job prospects and that they could potentially make a career out of it.

Besides promoting the industry, what will the EPMA's role will be over the next 10 years?

One of the things we identified quite clearly in the Road Map was the need to support customers and improve their knowledge about the potential benefits of PM. We can do that in different ways, through direct promotion using brochures, by attending events and, of course, by holding our own events. Our PM learning website has had something like 60,000 visitors on it since it was launched in 2008 and continues to attract a good level of interest for people from a wide range of backgrounds. It has been specifically designed for people who don't know about powder metallurgy and can give end

E-mail address: liznickelsfreelance@gmail.com.

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While electric or hybrid vehicles will take up a larger chunk of the market, there'll still be a solid demand for traditional standard powertrain.

users or students a basic understanding of what the process is, and how it works. It's also accessible in six different languages.

We're also working with other national associations and materials societies, such as IOM3, to run workshops specifically for different types of end users. We've had anything between 35 and 80 people attend these workshops and the feedback has always been very good. We will continue to run the events and promote them to other sectors as time goes by.

What we're doing more of, too, is getting involved with standardisation and the development of new standards. In newer sectors, such as the HIP industry and additive manufacturing, there is an understanding from the industry that it will need to develop standards if it's going to be able to compete with existing processes. In the MIM [metal injection molding] industry it took us something like ten years to get material standards in place, and we've got a similar job to do for both the HIP and the additive manufacturing sector. The EPMA has got an important role to play, acting as both a catalyst and a coordinator, trying to keep things moving and ensuring that certification is put in place.

How will PM markets develop? Are there any markets out there with untapped potential?

I don't believe that there's a really big gap where there are unknown market sectors that the PM industry could be called upon to fill. However, in the medical and aerospace industries, and to some extent in some of the consumer goods markets, there is some potential for PM to make a much bigger mark than it does. Here it's important to develop a good relationship with specifiers and the design engineers to make them realise that PM is a valid alternative to other processes that they're using at the moment.

However, this is something that does take time and effort to do, whether it's a case of working with individual companies on an individual level or with sectors to make them more aware of both the technical and financial benefits of PM. This is a very difficult task because companies that have used a technology for maybe 20 or 30 years will be naturally reluctant to take on something that's new and relatively untried. You much be able to show significant benefits to convert them.

Our customers work very hard at doing this day to day, and that's why a 'sexy' new technology like additive manufacturing provides a really good boost for the whole industry because it provides a talking point. It can change their perception of what PM and metal powders can do for them as a company.

Additive manufacturing has benefitted from a lot of good PR, hasn't it?

Yes – it is interesting for us at the EPMA when we visit end user exhibitions to promote the industry. Five years ago people would always come up and ask us: 'can MIM do this?' or 'can MIM do that?'. At the time they saw MIM as the new kid on the block. However, what we've seen recently is more interest in the additive side. It's a technology that end users can relate to. They can visualise it as a potential way of producing their parts.

However, whether it actually will of course is a different matter – because while additive manufacturing has had a lot of good press, it does have limitations in terms of what it's going be able to produce as a commercially viable product. Certainly, for higher volume applications, in the reasonable future, AM is not going to be the answer; these applications will still be covered by traditional methods like press and sinter or MIM.

However, in small volume applications such as for the aerospace industry, AM is a real possibility.

It is an industry that really has used very little in terms of powder metallurgy products until very recently – but AM seems perfect for it.

How will the markets in different regions develop over the next ten years?

There will continue to be growth in Asia, particularly in India. China, despite some current hiccups, will continue to grow but not as fast as it has over the last ten years. The markets there have already made a lot of the growth available to them, and although by European standards they are still very strong, I don't believe they will be as strong as they have been over the past decade.

The American market will continue to grow, as the economy there is in reasonably good shape at the moment. It will, however, be steady rather than explosive growth.

In comparison to America and Asia, Europe has not done as well over the last ten years – but there has been some growth and I think there will continue to be growth in Europe. I've read a number of forecasts about the automotive industry in Europe and the increase in investment and continued production growth over the next ten

There is a need to focus on young engineers who have not yet decided about being involved with PM.

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