

# ASM: Living in a material world

ASM International is the world's largest association of materials-centric engineers and scientists; dedicated to informing, educating, and connecting the materials community to solve problems and stimulate innovation around the world. We spoke to their Managing Director **William Mahoney** to discuss the organisation's history, engagement and role within the world of materials science and engineering.

**M**aterials science is an interdisciplinary subject, spanning the physics and chemistry of matter, engineering applications and industrial manufacturing processes. Today's modern society is heavily dependent on advanced materials: lightweight composites for faster vehicles, optical fibres for telecommunications and silicon microchips for the 'information revolution.' By studying the relationships between the structure and properties of a material and how it is made, materials scientists and engineers can also develop new materials and devise processes for manufacturing them. Materials science is vital for developments in nanotechnology, quantum computing and nuclear fusion, as well as medical technologies such as bone replacement materials. Materials scientists and engineers are thus key to innovation and development of products that we consider to be part of our everyday lives and are somewhat taken for granted.

ASM International is the leading association for engaging and connecting materials professionals and their organisations to the resources necessary to solve problems, improve outcomes, and advance society. As the world's largest and most established

materials information society, ASM engages and connects members to a global network of peers and provides access to trusted materials information through reference content and data, education courses, international events, and research. At the helm of ASM International is Managing Director William Mahoney who spoke with us at *Research Features*, outlining the importance and impact of ASM International for materials scientists, engineers and technicians worldwide.

*Hi Bill! What is your role at ASM and what kind of responsibilities do you have there?*

I am the Managing Director and Secretary of the Board. I am responsible for all management and operations of ASM International. ASM operations include our responsibilities as a leading professional society for materials scientists, engineers, and technicians, as well as our technology-based materials information services business.

*Could you tell us about ASM's background and heritage?*

ASM began in 1913 as a US-based association for metallurgists, focused on heat treating. Through the 20<sup>th</sup> century, the organisation grew in size, geography, and

**ASM operates at the intersection of industry, government, and academia, and blending the interests and capabilities of those distinct segments into common solutions requires some experience** ”

interests, expanding to additional materials, processes, and applications. Today, ASM materials information and expertise cover not only metals, but also ceramics, man-made polymers, and some carbon and hybrid materials. After more than a century of development, we remain today the leading commercial (non-military) source of peer-reviewed, technical reference information on materials.

*ASM releases numerous newsletters, webinars and videos, as well as your fantastic Advanced Materials and Processes magazine. What are the benefits of having these on offer, in terms of connecting fellow researchers?*

Our publications create international forums for researchers in industry, government, and academia to collaborate on an extensive variety of materials, processes, and applications. Since 72% of ASM members are from industry, our information and topics tend to be strongly positioned on the applied side of research, and focused at the intersection of design, materials selection and validation, and manufacturing.

*Although your name has an American focus in its title, do you extend your research outreach to collaborate with other countries internationally as well? How important is having these collaborations within science?*

ASM's name used to have an "American" focus. Today, much like IBM, the acronym is more of a logo than a name, primarily because we have such a strong global base. In addition to this, while we have not to date conducted a formal re-branding programme, our working internal translation of our acronym is "Applied Science for Materials International." ASM has over 90 chapters in 14 different countries, and we are gaining members in Canada, Mexico, India, Brazil, and of course, the EU. International collaborations are important to our research publishing, having led to over two million downloads of our materials research journals in 2016, and we are seeing about a 15% growth rate over that level so far in 2017.

*ASM runs numerous events throughout the year, including the upcoming Heat Treat 2017 convention. How successful are these events and why is it important to run them so frequently throughout the year?*

ASM has an expert events team operating out of our headquarters at The Dome in Materials Park, Ohio USA. We deliver all our events through this team. ASM conferences are regularly conducted each year in North



ASM Managing Director, William Mahoney

America, Europe, and Asia. The conferences are enormously successful both in terms of financial results, and also in terms of knowledge transfers and professional development delivered through the presentations, symposia, on-site certified training, and exhibits that comprise ASM conferences. Because of our breadth of materials, applications, and processes, we conduct numerous events each year targeted at key industries, such as aerospace, automotive, electronics, and oil and gas,

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as well as critical processes, such as heat treating, failure analysis, thermal spray, and more.

*Education appears to be high on the agenda for ASM, as you offer both interactive online courses and classroom/lab-based courses. Could you elaborate more on these and why improving access to education is so important?*

ASM offers 79 certificate-bearing courses on a wide variety of materials, processes,



ASM Headquarters

and applications. Providing these courses is a growing, multi-million-dollar annual business for ASM. Our growth reflects a significant industrial market need arising out of a diminishing availability of formally degreed, trained, and experienced materials scientists, engineers, and technicians. Only by proliferating ASM courseware directly and through an emerging group of channel partners can we help address this shortage of materials expertise, which is a global, multi-industry issue.

*Under your leadership as CEO of the South Carolina Research Authority (SCRA), annual revenues grew from \$74 million to \$455 million in your time there. How has that previous role, as well as any before that, shaped your attitude to leadership at ASM?* There are two aspects of my former company experience that have translated into mission-critical assistance for ASM. The first is that SCRA was a non-profit applied

R&D company, and many of the industry issues that ASM addresses today on behalf of commercial R&D and Quality departments are comparable to solutions provided by SCRA, although ASM is focused only on materials. The second is that, like SCRA, ASM operates at the intersection of industry, government, and academia, and blending the interests and capabilities of those distinct segments into common solutions requires some experience.

*What are the main themes of ASM's strategic plan for this year?*

ASM priority execution in 2017 addresses four key initiatives. First of all, growing membership and revenue; second, improving our bottom line; third, executing an extensive digital transformation and content re-engineering programme, which will fully transition ASM from its traditional physical publishing past to its electronic publishing future, and provide ASM data, which is

structured in conformance with emerging open semantic network standards; and finally, providing incremental support for our sister organisation, the ASM Materials Education Foundation. At this very moment, all these initiatives are on or ahead of their planned financial and programme goals for 2017.

*Which direction would you like to see materials research going over the next ten years and how will ASM's strategic plan play into this?*

ASM believes that the Materials Genome Initiative, fostered by entities such as US federal agency NIST, and by the EU arm of Intelligent Manufacturing Systems, will be the overarching research driver in the materials space over the next decade, if not longer. At a high level, this driver will extend requirements but also opportunities in supporting endeavours such as Integrated Computational Materials Engineering, Big Data development for materials data management, and applications of AI (artificial intelligence) operating on Big Data. A core element of ASM's strategic plan is our digital transformation/content re-engineering programme, which over the next two to three years will render the entire trove of ASM materials technical information fully discoverable, searchable, accessible, and interoperable over the internet.

• For readers interested in membership and volunteer opportunities on offer at ASM or to find out more in general about ASM, please visit their website at [www.asminternational.org](http://www.asminternational.org).



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