



Addressing Africa's challenges through materials development

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The African Materials Research Society (AMRS) held its 9th International Conference this past December in Gaborone, Botswana. The meeting was largely organized by the Botswana Institute for Technology Research and Innovation (BITRI). Thanks to the tireless efforts of Samuel Chigome, secretary of the local organizing committee, and the leadership of Nelson Torto, chair of the committee, AMRS2017 was a resounding success.

AMRS was conceived in 2000 at a USA-Africa Materials workshop held in South Africa. The US National Science Foundation (NSF) and the South African National Research Foundation (NRF) co-organized and co-sponsored the workshop. Participants explored opportunities for collaboration between the United States and Africa, with the overarching objective of developing the materials research capacity in Africa. Building on this initiative, AMRS was officially launched two years later in 2002 in Senegal, home to the first AMRS International Conference. Students and professionals from around the world, with expertise in the many facets of materials science, engineering, and research, attended the conference.

Since 2003, AMRS has held biannual international conferences. The meeting has moved among locations across the African continent, including Victoria Falls, Zimbabwe; Addis Ababa, Ethiopia; and Accra, Ghana. Symposia themes have broadly covered the areas of energy, environment, health, nanotechnology, computational materials science, mineral processing, construction, and materials education, usually with a focus on areas



AMRS dignitaries, including the vice president of Botswana, government officials, BITRI board members, invited speakers, and conference organizers, at the opening reception.

that are relevant to African development. At the most recent Gaborone meeting, a theme focused on materials for agriculture was introduced. Enthusiasm for this new direction was high, as evidenced by the high quality of speakers.

The AMRS meetings have maintained an upward trajectory in both attendance and excellence, as exemplified by the outstanding plenary speakers at AMRS 2017. The meeting was kicked off by inspirational words from the Vice President of Botswana, Mokgweetsi Masisi, who discussed the importance of technological innovation in materials for the nation's and indeed continent's development. Nobel Laureate Jean-Marie Lehn (Chemistry, 1987) then described the path of his research career and challenged the audience members to engage each other with broad, encompassing questions. The other four plenary speakers were Tobin Jay Marks (Northwestern University), Sossina M. Haile (Northwestern Univer-

sity), Paul Weiss (University of California, Los Angeles), and Nelson Torto (African Academy of Sciences). In all, approximately 315 oral presentations and 150 poster presentations were delivered, with an attendance of more than 500 from 45 different countries and representation from five continents. This large number of registrants translated into successful attendance in the meetings rooms, and lively discussions could be heard at both the oral and poster sessions.

Prior to the main conference, eight pre-conference workshops, covering topics ranging from electrospinning and light microscopy to crystallography and scanning electron microscopy, were held at the BITRI Centre for Materials Science (CMS). The workshop facilitators were a mix of university faculty members, who had come to Gaborone for the AMRS conference, and representatives from equipment suppliers for the institute. Almost 200 people attended the

workshops, the large majority of whom were graduate students. The workshop participants not only benefited from advanced training in the practical aspects of performing their research, but also gained an appreciation for the top-quality facilities available at BITRI CMS. The institute boasts, for example, a high-resolution Zeiss GeminiSEM 500 Field Emission Gun Electron Microscope, as well as a Kratos Axis Supra X-ray Photoelectron Spectrometer. The institute is a hub of electrospinning, as evidenced by two electrospinning labs with state-of-the-art electrospinning units. Two of the seven units are pilot scale: the Elmarco Nanospider NS1WS500U and Bioinicia LE500. Many workshop attendees expressed their interest in returning to the institute as visiting researchers as part of their future work.

Student participation was a key focus of AMRS2017. At least 80 students received sponsorships to attend the pre-conference workshops and conference from the Royal Society of Chemistry, American Chemical Society, Microscopy Society of America,

MRS, AMRS, African Network of Analytical Chemists, Institute of Development Management, NSF via the Joint Undertaking for an African Materials Institute, and Elmarco. For many of the student participants, it was their first time attending a scientific conference, and the international representation made the event even more significant.

The papers presented at AMRS2017 are invited for inclusion in a dedicated issue of *MRS Advances*, which will serve as the official depository for the Proceedings of the 9th International Conference. *MRS Advances*, published jointly by MRS and Cambridge University Press, is a peer-reviewed online journal that reports snapshots of work in progress on key materials topics, focusing, in particular, on the proceedings of conferences in materials research. AMRS participants are enthusiastic for this new partnership.



Attendees at one of the AMRS2017 presentations.

Complete information about the conference is available at <https://amrsbotswana.org>. Information about BITRI CMS is available at www.bitri.co.bw/cms.

The activities of AMRS have been strongly supported since its inception by the US NSF and, in recent years, by MRS. All participants gratefully acknowledge this support.

Sossina M. Haile

(with input from Samuel Chigome and Eric Garfunkel)

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