

Preface

The Pan American Materials Congress (PAMC) is in its third iteration and was originally initiated from a partnership between the Associação Brasileira de Metalurgia, Materiais e Mineração (ABM) located in Brazil and The Minerals, Metals & Materials Society (TMS) located in the United States. This partnership produced two previously successful materials science and engineering conferences, titled “Pan American Materials Congress” occurring in 2010 and 2014 and held in conjunction with ABM’s large annual conference. These events were co-chaired by Prof. Sergio Neves Monteiro, ABM’s incoming President. The 3rd PAMC, hosted by TMS, includes nine participating professional societies, and is co-located with the TMS 2017 Annual Meeting & Exhibition. It is the first time that this international materials science and engineering conference is held in North America, with TMS in the role of host society. A program covering a variety of materials science topics has been created based on the input from leading scientists and engineers representing eight countries and nine international materials, metals, and minerals societies listed below:

1. Argentina: Asociación Argentina de Materiales (SAM)
2. Brazil: Associação Brasileira de Metalurgia, Materiais e Mineração (ABM)
3. Peru: Asociación Peruana de Metalurgia, Materiales Y Minerales (APMMM)
4. Colombia: Colombian Materials Society
5. Chile: Instituto de Ingenieros de Minas de Chile (IIMCh)
6. Canada: Metallurgy and Materials Society (MetSoc), Canadian Institute of Mining, Metallurgy, and Petroleum (CIM)
7. Chile: Sociedad Chilena de Metalurgia y Materiales (SOCHIM)
8. Mexico: Sociedad Mexicana de Materiales (SMM)
9. United States: The Minerals, Metals & Materials Society (TMS; Host Society)

The participation of additional materials societies throughout the Americas is being sought and is under discussion. The organizers of this congress seek to provide an international Pan American focused program to address the needs of the materials science and engineering communities as they relate to government, academic, and industrial institutions, while providing an intimate setting for professionals to interact with and form strategic partnerships with their peers. Student

participation is strongly encouraged and is a focus for the lead organizers of this event. Additionally, as far as we are aware, this is the only international materials science conference where the emphasis is exclusively on North and South America.

The 3rd PAMC technical programming encompasses a wide range of materials, metals, and minerals with applications specific to the international communities that are represented, including symposia on materials for transportation and infrastructure, materials for the oil and gas industry, and minerals extraction and processing. These proceedings contain the following sections, which correspond to the themes of the conference:

- Advanced Biomaterials
- Advanced Manufacturing
- Materials for Green Energy
- Materials for Infrastructure
- Materials for the Oil and Gas Industry
- Materials for Transportation and Lightweighing
- Minerals Extraction and Processing
- Nanocrystalline & Ultra-fine Grain Materials & Bulk Metallic Glasses
- Steels

From this program, it is expected that rich discussions and collaborative opportunities will result, heavily focused on the Americas. The congress is scheduled to run for three consecutive days, with sessions in both the morning and afternoon. Special attention has been paid to communications and complementary planning between the congress organizers and TMS staff, and TMS 2017 symposia organizers and volunteers, to ensure that the sessions are synergistic and not duplicative of the TMS 2017 Annual Meeting & Exhibition programming.

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