

Materials Research - Ibero-american Journal of Materials

This issue contains a selection of papers presented at The 14th International Conference on “Rapidly Quenched and Metastable Materials” (RQ 14) which was held in Salvador, BA, Brazil, during 28th August to 2nd September 2011, organized by the Department of Materials Engineering, Federal University of São Carlos. The triennial series of RQ conferences started in Brela, in 1970 and then was followed by Boston, 1975; Brighton, 1978; Sendai, 1981; Würzburg, 1984; Montreal, 1987; Stockholm, 1990; Sendai, 1993; Bratislava, 1996; Bangalore, 1999; Oxford, 2002; Jeju Island, 2005 and Dresden, 2008. The RQ series primarily arose to satisfy the requirements of the rapidly quenched metals community, which grew significantly in the 1970s, and has expanded to researchers working with metastable materials, quasicrystals, nanometer scale materials and bulk metallic glasses. Research in these areas has been strongly stimulated in recent years by the developments of new materials with unique mechanical, chemical and physical properties. In this context RQ14 provided a comprehensive overview of the fundamental aspects, synthesis, materials, properties and applications in this evolving field of materials science. The sessions of RQ14 covered the following themes: undercooling; phase transformations; modeling; bulk metallic glasses; nanostructured materials; mechanical alloying; rapidly quenched materials; spray forming; structural characterization; mechanical, chemical, physical and magnetic properties and hydrogen in metastable alloys. During RQ14 a total of 230 abstracts were scheduled for presentation, submitted by scientists from 28 different countries. From those, 118 contributions were presented in oral sessions, including 09 plenary talks and 41 invited talks, and 112 were presented as posters. The selected papers which appear in this special issue gives a nice overview of most of the topics discussed during RQ14; due to space restrictions, a second group of selected papers is also being published in a special issue in the journal International Journal of Materials Research. We expect that these two special issues will provide the readers with a synthesis of the exciting recent developments associated with the field of rapidly quenched and metastable materials. As in previous RQ conferences, a particular highlight was the nomination of the RQ distinguished Fellowship Award; this year Prof. Srinivasa Ranganathan was awarded with such distinction for his pioneering research on rapidly quenched and metastable materials and his outstanding contributions to the expansion of the RQ community. We acknowledge the support from the Federal University of São Carlos, and the Brazilian financing agencies CNPq, FAPESP, FINEP and CAPES. We are also grateful for the industrial support from Altmann, FEI, Itaipu Transformadores, Jabu, Netzsch, EDG, RSP, Zeiss and EMBRAER. During the RQ International Advisory Committee meeting in Salvador it was decided to convene the next conference in China, in August 2014. We wish the organizers of RQ15 great success and look forward to meeting you in China.

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