

THE ALLOY PHASE DIAGRAM INTERNATIONAL COMMISSION

Tim G. Chart ¹
Tetsuo Mohri ²

I BACKGROUND AND INITIAL ACHIEVEMENTS

Phase diagrams are fundamental to materials science in terms of the extraction of metals, their processing to marketable products and their end usage. To this end APDIC was formed in 1986, Orlando, Florida, to assist in coordinating international activities for alloy phase diagram assessment. The original aims were to help meet the needs of the worldwide technical community in the field of phase diagrams by coordinating overall objectives for members' programmes and publications, establishing priorities in relation to the technological requirements of industry and commerce, coordinating among members to reduce duplication of effort, helping to set quality standards for phase diagram assessment, helping to ensure effective dissemination of data arising from the various programmes, and promoting assessment programmes worldwide.

Originally consisting of 10 member organisations, the commission has grown to include 16 members representing 25 countries from North and South America, Europe and Asia. The original aims of APDIC were largely completed some years ago, with most members' publication programs complete. Achievements as part of this international co-operative effort include over 60 published volumes on binary and ternary alloy systems totalling some 50,000 pages.

APDIC has moved with the times, and has developed into a group effectively managing research in their own particular country, and working together to exchange information and minimise duplication of effort, and provide top quality phase diagram information for real multi-component commercial systems using the latest technology.

2 AWARDS

APDIC presents each year a "Best Paper Award" for work of excellence in the field, and has developed an "Industrial Award" for excellence in the application of phase diagram information to practical industrial problems.

The industrial award is for the best achievement in raising awareness of the economic, societal and technical importance of applied knowledge in phase diagrams and related data within commercial organisations. The award consists of a bronze medal mounted on wood with a metal plaque inscribed with the award citation. Recipients include, eg, Villares Metals SA, Sumaré and Rolls-Royce plc, Derby.

3 APDIC WRRS

APDIC has a wealth of experience in the field of phase equilibria, and organises World Round Robin Seminars (WRRS). These are primarily concerned with the practical use of phase diagrams for industry and commerce, and also teaching the subject for that purpose. The seminars cover fundamental aspects through to industrial applications. The first WRRS was held in Sapporo 2003, followed by Rio de Janeiro in 2006 then Montpellier 2010 and London 2012. The 5th WRRS is to be held in Moscow this year. These seminars always have a practical theme, eg, "Phase Diagrams for Energy Saving" and "Materials for the Future".

4 THIS SPECIAL ISSUE

This issue of the Journal, devoted to Phase Diagrams and Thermodynamics is very welcome, and fulfils many of the aims of APDIC. The issue comprises mainly papers by contributors to APDIC WRRS, and scientists involved within APDIC activities. In times of financial constraint R&D in this field is extremely important to industry and commerce, and helps lead to growth and financial efficiency.

Finally, it should be noted that this special issue has been long planned and carefully prepared by Professor Andre Costa e Silva, a key member of APDIC and former chairman, and we express our sincere appreciation for his effort.

For further information see the web:
<http://www.apdic.info>

¹ APDIC Secretary, Chart Associates, Middlesex, UK. Email: tim.chart@btinternet.com

² WRRS Committee Chair, Institute for Materials Research, Center for Computational Materials Science, Tohoku University, Sendai, Japan.

