



Preface

Volumes 144–147 of the *Journal of Electron Spectroscopy and Related Phenomena* are the proceedings of the Fourteenth International Conference on Vacuum Ultraviolet Radiation Physics (VUV-XIV), held in Cairns, Australia, 19–23 July 2004. VUV-XIV was the latest in a triennial conference series held most recently in Trieste, San Francisco, Tokyo and Paris, and marked the first time that this series has visited the Southern Hemisphere. With around 420 scientific participants, principally from the Asia-Pacific, Europe and America, VUV-XIV continued the tradition of the VUV series as the most prominent conferences in the field of soft X-ray and VUV science.

Many different subfields of physics, chemistry, materials and surface sciences were represented at the conference. This gave it a truly multidisciplinary dimension and stimulated a fruitful exchange of ideas across various disciplines. Interaction of VUV radiation with the gaseous, liquid and solid-state phases provides powerful insights into the electronic and structural properties of matter. The gas phase has traditionally remained at the forefront of novel applications, such as coincidence techniques, which yield the most detailed information on electron correlations and few-body dynamics. Condensed matter physics has benefited greatly from the high-resolution VUV spectroscopy of strongly correlated and low-dimensional systems, which sheds light on the nature of superconductivity and other spectacular phenomena. Spin states in solids have been studied with unprecedented detail using magnetic-dichroism techniques. Soft X-ray and surface microscopy have further expanded to cover a range of materials of fundamental interest and industrial applications. Scanning transmission microscopy has become an important tool to study fundamental and applied aspects of biological and polymer systems.

Synchrotron radiation storage rings have remained the leading light sources in the VUV range. Australia, the host nation of the conference, is about to join the synchrotron club, with a 3 GeV third-generation synchrotron under construction in Melbourne. This brought a significant number of Australian participants and sponsors to VUV-XIV as well as

an informal, satellite workshop being arranged at the University of Melbourne for the period 12–13 July.

These proceedings are organized with the conference program included at the beginning of this volume. Published contributions are divided according to scientific area and are presented starting with plenary lectures, followed by invited and contributed papers.

We are grateful to the International Advisory Board (Prof. Shigemasa Suga, Chairman), the International Program Committee (Prof. John West, Chairman), the Local Organising Committee (Prof. Brenton Lewis, Conference Chairman), and the Professional Organisers, led by Mr. Barry Neame, for their contributions to the excellence of the conference. Not only the scientific programme for VUV-XIV, but also the venue, surroundings and magnificent conference banquet, have set new standards for the future!

The preparation of the proceedings required a considerable amount of technical work. We appreciate the authors providing us with good quality electronic manuscripts and illustrations. We have also benefited greatly from the latest in information technology, in particular, from an interactive web-hosted database. We wish to thank Dr. Steve Gibson for setting up and maintaining this database for us.

Finally, we hope that you will find much of interest in these proceedings. The next conference will be held in Berlin in 2007: we hope to see you there!

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