Preface

IUPAC's vision statement declares that the Union advances the worldwide role of chemistry for the benefit of Mankind. And one of its long-range goals states "IUPAC will utilize its global perspective and network to contribute to the enhancement of chemistry education, the career development of young chemical scientists, and the public appreciation of chemistry". In pursuit of this spirit, the Union established in 2000 the IUPAC Prize for Young Chemists and has been honoring since then outstanding young research chemists at the beginning of their careers by making annual awards.

The prizes are given for the most outstanding Ph.D. theses in the area of the chemical sciences, as described in 1000-word essays. For details, please refer to <www.iupac.org/news/prize.html> (IUPAC Prizes for Young Chemists). IUPAC awards up to five prizes annually, each comprising USD 1000 and travel expenses to the next IUPAC Congress.

As immediate Past President of IUPAC, I was honored to chair the prize selection committee of eminent chemists, who enjoyed reading essays of 47 applicants from 19 countries. The committee was extremely pleased to note the increase in the number of applicants to 47 from 29 last year. This increase is in excellent accord with IUPAC's worldwide celebration of the International Year of Chemistry throughout this year. After critical evaluation of the originality and excellence of the essays and research results, the committee decided unanimously to award 2011 Prizes to the following six chemists:

- **Rubén D. Costa**, University of Valencia, Valencia, Spain: "Theoretical and experimental study of light-emitting electrochemical cells based on ionic transition-metal complexes: From the molecule to the device"
- **William Donald**, University of California, Berkeley, CA, USA: "Ion nanocalorimetry: Measuring absolute reduction potentials and investigating effects of water on electron solvation and ion fluorescence"
- **Matthew Macauley**, Simon Fraser University, Burnaby, BC, Canada: "Insight into *O*-GlcNAc protein modification using chemical and biochemical tools"
- **Bozhi Tian**, Harvard University, Cambridge, MA, USA: "Design, synthesis, and characterization of novel nanowire structures for photovoltaics and intracellular probes"
- **Sheng Xu**, Georgia Institute of Technology, Atlanta, GA, USA: "Oxide nanowire arrays for energy sciences"
- **Chengqi Yi**, University of Chicago, Chicago, IL, USA: "Probing the AlkB family DNA/RNA repair enzymes with a chemical disulphide cross-linking approach"

All the awardees were invited to present posters on their research at the 43rd IUPAC World Chemistry Congress, San Juan, Puerto Rico, 30 July–6 August 2011. Upon IUPAC's invitation, five of the six winners offered review papers on their research topics for consideration as publications in *Pure and Applied Chemistry* (*PAC*). And the five refereed articles appear in this issue of *PAC*.

Finally, it is an honor and a pleasure to congratulate each of the winners and their supervisors for winning the 2011 IUPAC Prize for Young Chemists. It is hoped that each of them will continue to contribute to a bright future for chemical sciences and technologies and to take active roles in IUPAC bodies in the future.

Jung-Il Jin
IUPAC Immediate Past President and
Chair of the IUPAC Prize Selection Committee