

Preface

During the 10th International Conference on Positron Annihilation (ICPA-10) in Beijing, China, I proposed to the International Advisory Committee that the University of Missouri-Kansas City (UMKC) be host to the 11th International Conference on Positron Annihilation (ICPA-11). Professor A.T. Stewart was pleased to accept my invitation on behalf of the Committee. From May 25 through May 30, 1997, ICPA-11 met at the neighboring campus of Rockhurst College in Kansas City. Only twice before had ICPA been held in the USA: ICPA-1 in Detroit, Michigan (1965) and ICPA-6 in Arlington, Texas (1982).

Kansas City had the additional privilege of entertaining the American Physical Society when it met in March of 1997 to celebrate the centennial discovery of the electron by J.J. Thomson. It has been sixty-five years since C.D. Anderson discovered the antielectron, or positron, and in those years this field of study has become invaluable to modern society. The University of Missouri-Kansas City was proud to be host of the largest ICPA to date, attracting 325 participants from thirty-nine countries. The International Program Committee set forth the main objectives of ICPA-11 as: (1) to present and exchange the newest and most important scientific discoveries in subjects related to positron annihilation during the past three years, (2) to foster and encourage young scientists and graduate students to pursue careers or write theses in the area of positron annihilation, and (3) to promote collaboration and cooperation among universities, industry, and government in research on positrons and positronium.

ICPA-11 had the honor of having two plenary lecturers. Dr. James R. McGrath, Distinguished Professor of Virginia Polytechnic Institute and State University in the USA, spoke on "Current Trends in Polymer Science," and Dr. Alfred Seeger, Professor Dr. from Max-Planck-Institut für Metallforschung in Germany, spoke on "Challenges of Positron and Positronium Physics by Materials Sciences." A total of 350 papers were presented in oral, poster and discussion forms. Among these, forty-eight papers were presented as invited talks. Six recently-developed and somewhat controversial subjects--polymers, semiconductors, larger molecules, AMOC, two detectors/elementary analysis, and data analysis/optimization--were discussed in more free and open sections of discussions and roundtables. One highlight of the conference was the special section for student competition, held in honor of Professors A.T. Stewart and L. C. Roellig who organized the first ICPA conference in 1965. Professors Stewart and Roellig evaluated thirty student participants and selected the winners of this competition: (first place) B. Ghaffari of the University of Michigan; (second place) K. Iwata of the University of California-San Diego and M. Seneyasu of Tohoku University; (third place) A. Baugher of the College of William and Mary and R.W.N. Nilen of the University of the Witwatersrand. Professor R.N. West delivered the speech at Thursday evening's banquet, with assistance from Professors K. Canter and P. Hautojärvi. Many of our senior colleagues, including Professors M. Doyama, I.K. MacKenzie, J.D. McGervey, L.C. Roellig, A. Seeger and A.T. Stewart were recognized that evening. The final talk of the conference was delivered by Professor Dr. W. Trifhäuser, who summarized the week's program.

All papers appearing in this *Proceedings* were reviewed by ICPA-11 participants. This is a first experience for ICPA proceedings. We believe that the referee process has effectively raised the quality of papers at the expense of reducing their number. I am indebted to my co-editors, M. Eldrup, D.M. Schrader, and R.N. West, who sacrificed their most precious time during the conference and have contributed their invaluable intellectual resources for the

proceedings. The voluntary cooperation of all reviewers, during and after the conference, allowed the refereeing and editing process to move smoothly toward the compilation of this final document. I especially thank Ms. Kenna Hyatt, the conference secretary, who has prepared the program and manuscripts for the *Proceedings* in a highly professional manner.

I am very grateful to the International Program Committee members--A. Bansil, M. Eldrup, K.G. Lynn, D.M. Schrader, and R.N. West--for their inspiring, diligent, and instrumental work on the program. I would also like to express my appreciation to Ms. Josie Maningat, who managed all financial and conference-site affairs for ICPA-11, and to my students, H. Cao, C. Chao, C.-M. Huang, H.L. Yen, J.-P. Yuan, Q. Zhang, and R. Zhang, who contributed in many areas seen or unseen toward ICPA-11. Finally I would like to thank all staff, participants, and sponsors for their support.

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