2009

Preface to the Proceedings of the XXVI International Conference on Photonic, Electronic and Atomic Collisions

Ann Orel
University of California-Davis

Anthony F. Starace
University of Nebraska-Lincoln, astarace1@unl.edu

Dragan Nikolić
Western Michigan University

Nora Berrah
Western Michigan University

Thomas Gorczyca
Western Michigan University

See next page for additional authors

Follow this and additional works at: http://digitalcommons.unl.edu/physicsstarace

Part of the Physics Commons

http://digitalcommons.unl.edu/physicsstarace/171

This Article is brought to you for free and open access by the Research Papers in Physics and Astronomy at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Anthony F. Starace Publications by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.
PREFACE

The XXVIth International Conference on Photonic, Electronic and Atomic Collisions was held on the campus of Western Michigan University (WMU) in Kalamazoo during 22-28 July 2009. Kalamazoo, the home of a major state university amid pleasant surroundings, was a delightful place for the conference. The 473 scientific participants, 111 of whom were students, had many fruitful discussions and exchanges that contributed to the success of the conference. Participants from 43 countries made the conference truly international in scope.

The 590 abstracts that were presented on the first four days formed the heart of the conference and provided ample opportunity for discussion. This change, allowing the conference to end with invited talks, was a departure from the format used at previous ICPEAC gatherings in which the conferences ended with a poster session. The abstracts were split almost equally between the three main conference areas, i.e., photonic, electronic, and atomic collisions, and the posters were distributed across the days of the conference so that approximately equal numbers of abstracts in the different areas were scheduled for each day. Of the total number of presented abstracts, 517 of these are included in this proceedings volume, the first time that abstracts have been published by ICPEAC.

There were 5 plenary lectures covering the different areas of the conference: Paul Corkum (University of Ottawa) talked on attosecond physics with atoms and molecules, Serge Haroche (Collège de France) on non-destructive photon counting, Toshiyuki Azuma (Tokyo Metropolitan University) on resonant coherent excitation of highly-charged ions in crystals, Eva Lindroth (Stockholm University) on atomic structure effects, and Alfred Müller (Justus Liebig University) on resonance phenomena in electron- and photon-ion collisions. Two speakers gave very illuminating public lectures that drew many people from the local area, as well as conference participants: Patricia Dehmer (U.S. DOE) gave a talk on “Facing Our Energy Challenges in a New Era of Science,” and William Phillips (Nobel laureate, NIST) presented a talk on “Time, Einstein, and the Coolest Stuff in the Universe.” These public talks, held on Thursday and Friday evenings, respectively, were very accessible to a general audience. In addition, there were 61 progress reports on ongoing current research, and 26 special reports selected from the submitted abstracts based on their relevance and importance. These talks covered the full range of the conference topics.

Notably, this was the 50th anniversary of ICPEAC and a formal session was held the first day to honor the event as well as those who were instrumental in initiating the conference. Thirteen scientists, representing both those from the early days of ICPEAC as well as chair of previous ICPEACs, were present and called to the stage, including Benjamin Bederson, Lewis Branscomb, Robert Crompton, Alexander Dalgarno, Gordon Dunn, Werner Eissner, Brian Gilbody, Edward Gerjuoy, Hartmut Hotop, Eugen Merzbacher, Eugene Rudd, Felix Smith, and Aaron Temkin. Steven Manson was the chair of the session and he introduced those present from the early days. Joachim Burgdörfer presented an overview of the history of ICPEAC. This session was followed by a special anniversary reception to honor all of the early “ICPEACers”.

1
Generous support for the conference was provided by IUPAP, the WMU President’s office, and the National Science Foundation. The funds were sizeable, timely, and greatly appreciated, and permitted us to support a significant number of young scientists (postdocs and students) and persons from developing/disadvantaged countries. Nevertheless, the number of requests was far greater than the total support available (by about a factor of five!), and we had to turn down many financial requests. We encourage the organizers of the next ICPEAC to seek a higher level of funding for supporting young scientists and scientists from developing/disadvantaged countries.

All in all, the XXVIth ICPEAC in Kalamazoo was very successful. The plenary lectures and the progress and special reports bridged the gap between the different fields of collision physics, making it possible for non-experts in a given area to gain insight into new areas. Also, included among the speakers were several young scientists, namely, postdocs and students, who brought new perspectives to their fields. The next ICPEAC will take place in Belfast in 2011, and the ones after that will be in Lanzhou in 2013 and Madrid in 2015. Given the rapidity with which science is advancing in all of the areas covered by ICPEAC, we expect that these future ICPEAC conferences will be as stimulating as this most recent one was, as indicated by the contributions presented in this proceedings volume.

Ann Orel, University of California-Davis
Anthony F. Starace, University of Nebraska-Lincoln
Dragan Nikolić, Western Michigan University
Nora Berrah, Western Michigan University
Thomas Gorczyca, Western Michigan University
Emanuel Kamber, Western Michigan University
John A. Tanis, Western Michigan University
XXVIth International Conference on Photonic, Electronic and Atomic Collisions

SPONSORS AND EXHIBITORS

CRYOGENIC Limited
International Union of Pure and Applied Physics (IUPAP)
Kalamazoo County Convention and Visitors Bureau
National Electrostatics Corporation
PhysMath Central
*Physical Review Letters* and *Physical Review A*
RoentDek Handels GmbH
Taylor and Francis Group
WIENER Corporation

Western Michigan University:
*Office of the President*
*Department of Physics*
*College of Arts and Sciences*
*Office of the Vice President for Research*
*The Graduate College*
*Diether H. Haenicke Institute for Global Education*
XXVIth International Conference on Photonic, Electronic and Atomic Collisions

Executive Committee

Chair

Joachim Burgdörfer
Institute for Theoretical Physics
Vienna University of Technology
Wiedner Hauptstr. 8
A 1040 Wien
AUSTRIA
Phone: +43-1-58801-13610
Fax: +43-1-58801-13669
joachim.burgdoerfer@tuwien.ac.at

Vice-Chair

F. Barry Dunning
Physics and Astronomy Department
6100 Main MS-61
Rice University
Houston, Texas 77005-1827
USA
Phone: +1-713-348-3544
Fax: +1-713-348-4150
fbd@rice.edu

Secretary

Dominique Vernhet
Institut des NanoSciences de Paris
Campus Boucicaut
140 rue de Lourmel
75015 Paris
FRANCE
Phone: +33-1-44-27-45-18
Fax: +33-1-43-54-28-78
dominique.vernhet@insp.jussieu.fr

Treasurer

Henrik Cederquist
Department of Physics
AlbaNova University Center
S-10691 Stockholm
SWEDEN
Phone: +46-8-55-37-86-26
Fax: +46-8-55-37-86-01
cederquist@physto.se

Past Chair

Yasunori Yamazaki
Graduate School of Arts and Sciences
University of Tokyo
JAPAN
Phone: +81-48-462-4644
Fax: +81-48-462-4644
yasunori@phys.c.u-tokyo.ac.jp

Members

Nora Berrah, USA
Igor Bray, Australia
Xiaohong Cai, China
Derrick Crothers, UK
Thomas Gorczyca, USA
Emanuel Kamber, USA
Marco Lima, Brazil
Fernando Martin, Spain
Deepak Mathur, India
Jim McCann, UK
John Tanis, USA
Joachim Ullrich, Germany
XXVIth International Conference on Photonic, Electronic and Atomic Collisions

General Committee

Lorenzo Avaldi, Italy
Marcio Bettega, Brazil
Thomas Brabec, Canada
Carmen Cisneros, Mexico
James Colgan, USA
Stefan Fritzsche, Germany
Jimena Gorfinkiel, UK
Toshio Hyodo, Japan
E. Krishnakumar, India
Lars Bojer Madsen, Denmark
Nicholas Martin, USA
Andrew Murray, UK
Noboyuki Nakamura, Japan
Yuri Popov, Russia
Luis Rosso, Spain
Henning Schmidt, Sweden
Bela Sulik, Hungary
Kenneth T. Taylor, UK
Andrzej Warczak, Poland
Armin Wisthaler, Austria

Thomas Baumert, Germany
Alexander Borovik, Ukraine
Amine Cassimi, France
C. Lewis Cocke, USA
Pablo Fainstein, Argentina
Dmitry Fursa, Australia
Ronnie Hoekstra, Netherlands
Tom Kirchner, Canada
Birgit Lohmann, Australia
Nikolai Manakov, Russia
Michael Meyer, France
Ladislav Nagy, Romania
Ann Orel, USA
Carlos Reinhold, USA
Stefan Schippers, Germany
Emma Sokell, Ireland
Masahiko Takahashi, Japan
Kiyoshi Ueda, Japan
Shin Watanabe, Japan
Yaming Zou, China
XXVIth International Conference on Photonic, Electronic and Atomic Collisions

Local Organizing Committee

Chairs:
Nora Berrah (Western Michigan University)
John Tanis (Western Michigan University)

Co-Chairs:
Thomas Gorczyca (Western Michigan University)
Emanuel Kamber (Western Michigan University)

Members:
Itzik Ben-Itzhak (Kansas State University)
C. Lewis Cocke (Kansas State University)
Brett Esry (Kansas State University)
Stanley Haan (Calvin College)
Kate Kirby (Harvard-Smithsonian Institute)
Dragan Nikolic (Western Michigan University)
Ann Orel (University of California-Davis)
Carlos Reinhold (Oak Ridge National Lab)
Robin Santra (Argonne National Lab)
David Schultz (Oak Ridge National Lab)
Anthony Starace (University of Nebraska-Lincoln)
## Previous Proceedings

**International Conference on Photonic, Electronic and Atomic Collisions (ICPEAC)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Held</th>
<th>Publisher</th>
<th>ISBN/ISSN</th>
</tr>
</thead>
<tbody>
<tr>
<td>XXV</td>
<td>2007 Freiburg, Germany</td>
<td>Journal of Physics Conf. Series</td>
<td>1742-6596</td>
</tr>
<tr>
<td>XXIV</td>
<td>2005 Rosaria, Argentina</td>
<td>World Scientific</td>
<td>981-270-412-4</td>
</tr>
<tr>
<td>XXIII</td>
<td>2003 Stockholm, Sweden</td>
<td>Physica Scripta T110</td>
<td>91-89621-16-6</td>
</tr>
<tr>
<td>XXII</td>
<td>2001 Santa Fe, USA</td>
<td>Rinton Press</td>
<td>1-58949-018-5</td>
</tr>
<tr>
<td>XXI</td>
<td>1999 Sendai, Japan</td>
<td>AIP Conference Proceedings 500</td>
<td>1-56396-777-4</td>
</tr>
<tr>
<td>XX</td>
<td>1997 Vienna, Austria</td>
<td>World Scientific</td>
<td>981-02-3425-2</td>
</tr>
<tr>
<td>XIX</td>
<td>1995 Whistler, Canada</td>
<td>AIP Conference Proceedings 360</td>
<td>1-56396-440-6</td>
</tr>
<tr>
<td>XVII</td>
<td>1991 Brisbane, Australia</td>
<td>Adam Hilger</td>
<td>0-7503-0167-8</td>
</tr>
<tr>
<td>XVI</td>
<td>1989 New York, USA</td>
<td>AIP Conference Proceedings 205</td>
<td>0-88318-390-0</td>
</tr>
<tr>
<td>XV</td>
<td>1987 Brighton, England</td>
<td>North Holland/Elsevier</td>
<td>0-444-87083-0</td>
</tr>
<tr>
<td>XIV</td>
<td>1985 Palo Alto, USA</td>
<td>North Holland/Elsevier</td>
<td>0-444-86998-0</td>
</tr>
<tr>
<td>XIII</td>
<td>1983 Berlin, Germany</td>
<td>North Holland/Elsevier</td>
<td>0-444-86844-5</td>
</tr>
<tr>
<td>XII</td>
<td>1981 Gatlinburg, USA</td>
<td>North Holland/Elsevier</td>
<td>0-444-86323-0</td>
</tr>
<tr>
<td>XI</td>
<td>1979 Kyoto, Japan</td>
<td>North Holland/Elsevier</td>
<td>0-444-85434-7</td>
</tr>
<tr>
<td>X</td>
<td>1977 Paris, France</td>
<td>North Holland</td>
<td>0-444-85003-1</td>
</tr>
<tr>
<td>IX</td>
<td>1975 Seattle, USA</td>
<td>University of Washington Press</td>
<td>0-295-95455-8</td>
</tr>
<tr>
<td>VIII</td>
<td>1973 Belgrade, Yugoslavia</td>
<td>Institute of Physics Belgrade</td>
<td></td>
</tr>
<tr>
<td>VII</td>
<td>1971 Amsterdam, Netherlands</td>
<td>North Holland</td>
<td></td>
</tr>
<tr>
<td>VI</td>
<td>1969 Cambridge, USA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>V</td>
<td>1967 Leningrad, USSR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IV</td>
<td>1965 Quebec, Canada</td>
<td></td>
<td></td>
</tr>
<tr>
<td>III</td>
<td>1963 London, UK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>II</td>
<td>1961 Boulder, USA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>1958 New York, USA</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>