

**Conference Record of the
Twenty-Fifth International Power
Modulator Symposium
and
2002 High-Voltage Workshop**

**International Power Modulator Conference
Hollywood Renaissance Hotel
Hollywood, California
June 30–July 3, 2002**



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Technically Co-Sponsored by:

**The Electron Devices Society and
The Dielectrics and Electrical Insulation Society of
The Institute of Electrical and Electronics Engineers, Inc.**

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2002 High-Voltage Workshop

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IEEE Catalog Number: 02CH37381
ISBN: 0-7803-7540-8
ISSN: 1076-8467

Preface

The 2002 International Power Modulator Conference is a merger of the Twenty-Fifth International Power Modulator Symposium with the 2002 High Voltage Workshop. We merged the two meetings because they have many things in common: Both traditionally occur in the early summer on even-numbered years and they principally feature applied technologies that interest many of the same people. The Symposium and Workshop have served the pulsed power and high voltage communities for decades and are supported by many of the same sponsors. Unfortunately, both meetings have also experienced a decline in attendance over the past ten years. We merged the meetings to increase attendance and to better serve our communities in the following ways:

- **Publish Combined Proceedings** — The new Power Modulator Conference publishes papers from the symposium and the workshop, in an effort to increase the reference value of both meetings. Normally, the workshop does not collect and publish papers. Now we do.
- **Feature New Technologies in Various Ways** — The symposium and workshop activities were scheduled separately but in a complementary way. The Symposium portion of the conference features two days of oral and poster sessions that cover a very wide range of topics. The workshop features only four frontier-technology topics and

presents the information in a one-day plenary forum. We designed the conference to have a variety of topics and presentation methods so that the combined meeting is lively and interesting.

- **Combine Resources** — The symposium and workshop compete each year for contributions from many of the same sponsors and compete for those attendees who cannot afford to attend both events. By combining the two meetings, our sponsors made a single contribution and attendees made a single trip. In each case, sponsor and attendee receive more value for their money.

We are pleased to report that the merger was a grand success! Over 240 people attended the International Power Modulator Conference and they contributed over 150 papers for publication. The conference served as host to nine exhibitors who displayed their latest high-technology products. The conference also introduced two new awards that commemorate the lives and accomplishments of Tom Burkes and William Dunbar.

Thank you for your interest and support of the new 2002 International Power Modulator Conference.

Hugh Kirbie Dan Goebel
Conference Co-Chairs

ACKNOWLEDGMENTS

The 2002 International Power Modulator Conference is a new venue for pulsed power information that combines the 25th International Power Modulator Symposium and the 2002 High Voltage Workshop. What's also new is the conference organization. In place of a professional conference-management service, a meeting planner and a small army of volunteers now carry out the technical and social planning of the new Power Modulator Conference. In our new organization, more people are involved in conference planning than ever before. They bring to the conference new ideas and a high level of personal energy and enthusiasm. We are grateful for their help and would like to thank the many individuals who contributed their time and effort. The first gathering of the Power Modulator Conference was a great success. We hope the conference continues to grow, along with the strong volunteer support we received from those cited below.

Program and Session Chairs

A special thanks goes to the Program Chairs Andreas Neuber, Klaus Frank, and Hulya Kirkici, who organized the Power Modulator and Workshop technical programs. Your patience, wisdom, and guidance were sincerely appreciated. The program chairs worked directly with our various session chairs who organized the many presentations and presided over the sessions at the conference. To the following Chairs, we thank you for your diligent efforts and high professional standards. Oral Session Chairs: Andreas Tauschwitz, Steven Pronko, Hansjoachim Bluhm, Richard Ness, Adriaan Welleman, James Dickens, Michael G. Mazarakis, John A. Gaudet, and John Verboncoeur. Poster Session Chairs: Werner Hartmann and Jane Lehr. Workshop Session Chairs: Karl H. Schoenbach, Roderich (Rod) Keller, W. Jim Sarjeant, and Edl Schamiloglu.

Local Organizing Committee

The new Power Modulator Conference introduced new publication standards for the symposium part of the meeting and required papers from the workshop presenters for the very first time. To help our authors with all the new requirements, we established a publications office at the conference that was staffed by our local organizing committee from Lawrence Livermore National Laboratory. The following veteran crew did a marvelous job in collecting, organizing, and tracking the many authors and papers submitted during the conference: Jim Watson (Chair), Lyn Ahboltin, Sally Bahowick, Debbie Brown, Donna Chato, Karen Houston-Patterson, Bryan Lee, Lisa Maciel, and Craig Ollis. Please accept our sincere thanks. We couldn't have done it without you.

Action Committees

The following action committees were formed to market the conference to potential attendees and to assist the staff and chairs with paper reviews, selection of invited speakers, and organizational tasks. The committee members are too numerous to mention here, but we would like to thank the various Chairs for organizing their committee members into a highly valued resource:

US Attendance Committee – Dan Schweickart

Overseas Attendance Committee – Karl Schoenbach

New Technologies Committee – James O'Loughlin

Awards Committee – Martin Gundersen and Malcolm Buttram (Co-Chairs)

IEEE Student Awards Committee – Robert N. DeWitt

Thank you very much for your steadfast support.

Student and Professional Awards Committees

This year, our conference debuted two new awards that are named in honor of two unforgettable contributors to the pulsed power field. The Tom R. Burkes Student Award is given in the categories of best undergraduate and best overall students. The William G. Dunbar Award is given to a professional who has made sustained contributions within the high voltage community. The development of these awards is due to the personal energy of two individuals, and we recognize their outstanding efforts. Our thanks go to Robert DeWitt and his IEEE Student Awards Committee for developing the Tom R. Burkes Student Awards. We also thank and recognize the efforts of Dan Schweickart and the Professional Awards Committee, who converted the DEIS High Voltage Award into the William G. Dunbar Award. Both Robert and Dan labored against time to provide a living tribute to Tom and Bill. Thanks from all of us.

Special Recognition

Conference production requires a sustained effort, and in our case several intrepid individuals supplied that effort and have earned our lasting gratitude. At the University of Southern California, our special "thank you"

goes to Noreen Tamanaha, Conference Administrator, and to Lynn Yamaoka, Webmaster. Thank you for your help and devotion. At Los Alamos National Laboratory, our special "thank you" goes to Marianna Vigil, Publications Administrator, and to Lloyd Gordon, Technical Editor, for converting the massive jumble of contributed papers we received at the conference into the well-organized document we now enjoy. Thank you both for attaining excellence in all things devoted to our high standards.

Our success as an organized event is entirely due to the work of our Meeting Planner, Christine Crory. We received many compliments on how well the conference events all fit smoothly together. If it looked smooth from the outside, it is because Chris worked tirelessly behind the scenes to make it so. Thank you, Chris!

Also, our thanks go to all of you who attended the 2002 International Power Modulator Conference. We hope you enjoyed it.

Hugh Kirbie: Conference Co-Chair

Dan Goebel: Conference Co-Chair

Martin Gundersen: Executive Committee Chair

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