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13. ABSTRACT

The Forty-Third Annual Gaseous Electronics Conference was held as planned and was a great success.

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FINAL REPORT

SUPPORT
of the

FORTY-THIRD ANNUAL GASEOUS ELECTRONICS CONFERENCE

Conference Period: October 16, 1990 through October 19, 1990

Funding Period: 1 Oct 1990 to 30 April 1991
AFOSR -91-0007

Prepared for

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Summary:

The 43rd Annual Gaseous Electronics Conference was held in Champaign, IL from Oct. 16 – 19, 1990 and addressed the basic phenomena and plasma processes in ionized gases together with the theory and measurement of relevant atomic and molecular collisional processes. Specifically, papers were solicited and selected which addressed fundamental processes in electric discharges, gas lasers, ion sources, breakdown, switching, plasma and atmospheric chemistry, plasma-surface interactions, plasma processing, fundamental theory and measurements of electron and heavy particle collisions and similar topics. Although the emphasis was on low energy processes, papers that were concerned with electronic or radiative processes produced by high energy electrons or heavy particles was deemed appropriate and encouraged. Papers dealing with the operation of specific devices were not accepted unless the emphasis was on the physics controlling its performance. Support for the conference was derived from the registration fee, government agency sponsorship and industrial contributions.

Technical information:

There were 260 papers given either by the traditional lecture or by poster presentation method: 59 were focused on the basic aspects of electron and heavy particle collisions and included a workshop; 71 were aimed towards the physics of plasma processing and included a workshop on the GEC reference cell reactor; 58 discussed the problems and advances in simulation and modelling; 51 discussed the photophysics of lasers and lamps; and the remainder distributed among the other areas of interest to the conference. It was attended by 360 registered participants which included 32 from countries outside of the North American continent. A listing of the scientists attending the conference is attached. The program and the abstracts of the conference were published in the Bulletin of the American Physical Society, 36, 181–222, Feb. 1991.

Support for the conference was derived from contributions from NSF (\$4k) and AFOSR (\$8k), Industry: GTE (\$4k), IBM (\$2.5k), GE (\$2k) and smaller contributions (\$0.5k) by Extrel, Coherent, Inc., and LAM Research, in addition to that derived from the registration fee. While the conference has been self-supported through such contributions in the past, the doubling of the abstract publication charges in the Bulletin of the APS has significantly upset the budget planning and required using part of the reserve which had been established to finance one conference in the event of a cancellation due to unforeseen circumstances (weather, earthquake, national emergency, etc). This was especially crucial

for this year, because NSF cut their contribution by one-half, and ARO was unable to make any contribution and thus our reserve has been seriously depleted below the minimum level.

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