

Neutron Capture Gamma-Ray Spectroscopy

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**PROCEEDINGS OF THE
THIRD INTERNATIONAL SYMPOSIUM ON NEUTRON CAPTURE
GAMMA-RAY SPECTROSCOPY AND RELATED TOPICS**

September 18–22, 1978
Brookhaven National Laboratory, Upton, New York
and
State University of New York, Stony Brook, New York

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FOREWORD

The post World War II era witnessed a tremendous growth in the research carried out in neutron-induced reactions and especially in neutron capture γ -ray studies. This growth was stimulated by the availability of neutron sources, such as reactors and accelerators, and by the development of high resolution γ -ray and conversion electron detectors. Today the combination of high flux reactors and precise instrumentation has produced spectral data of exceptional quality, as the pages of these proceedings illustrate.

The world-wide community of the practitioners of the art of capture γ -ray spectroscopy has met three times in the last decade: the first international symposium on this subject was held at Studsvik, Sweden in 1969, and the second at Petten, The Netherlands in 1974. A smaller meeting, of mostly U.S. and some European participation, was held at Argonne National Laboratory in 1966. A perusal of the proceedings of these meetings shows the striking advances in this now mature field of physics over the last dozen years. Each meeting has seen a small but perceptible increase in the number of papers presented and the number of laboratories represented. More importantly, each meeting has documented the increasing impact of (n,γ) research, not only on other areas of basic physics, but also on commercial and medical applications of this technology.

A total of 29 invited papers and 97 contributed papers were presented at this symposium. Approximately 150 scientists attended the meeting--4 days of sessions at Brookhaven National Laboratory and one at the nearby campus of the State University of New York at Stony Brook. This volume of conference proceedings contains all the material presented at the symposium, including papers not presented orally due to lack of time. Only the discussions have been omitted. From the variety of papers contained in this volume, the reader can judge for himself the impact of (n,γ) research in the pure and applied physics domains.

The Chairman wishes to express his gratitude to the many conscientious contributors who made the conference possible. The sponsors-- U.S. DOE, IUPAP, U.S. NSF, APS, ANS and SUNY-Stony Brook--

provided financial and moral support and invaluable publicity. The advisors and organizers, listed here, gave me many valuable suggestions concerning the operation of the meeting. I am especially indebted also to K. Abrahams, of ECN-Petten, and E. Sheldon, of the University of Lowell, for several helpful letters concerning the organization of a meeting.

The largest measure of gratitude belongs to the staff of Brookhaven National Laboratory who worked tirelessly on the many conference details. These include Mrs. Cora Feliciano, who provided the high quality secretarial assistance so vital for the preparation, execution, and completion of the symposium business; Mrs. Virginia Sayre and her staff from the BNL Public Relations Department, who was able at several crucial moments to keep the conference machinery functioning; and Jack Craig and his technical crew who managed the audio-visual equipment.

The cooperation of Peter Kahn, Chairman of the Physics Department of Stony Brook, is also gratefully acknowledged. The hospitality extended by the University was much appreciated by the delegates.

The success of the excursion to Fire Island was due in large measure to the cooperation of Mr. Paul Stoutenberg and Miss Jill Johnson, Park Rangers. The interesting lectures on the flora and fauna of the region provided an unusual addition to the technical program of the conference. Our gratitude extends also to higher authorities who provided the superb weather with which we were blessed.

I am personally looking forward to the next meeting in this series, which is to be held at Grenoble, France, near the site of one of the world's foremost laboratories. The world community of (n, γ) spectroscopists will meet again in a few years and enjoy, I am sure, another stimulating and instructive gathering.

Robert E. Chrien
Conference Chairman

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