

tion," discussed the influence of applied voltage, gas pressure, dose rate, and gamma energy on the behavior of various gases in terms of a "specific ionization factor." F. Muller of Federal Telecommunications Laboratories, Inc. spoke on "Electrical Conductivity Induced by Ionizing Radiation in Some Polymeric Materials." He presented data showing that upon irradiation, the conductivity increased to a maximum in a time which is longest for nonpolar and shortest for polar polymers. In some cases, the conductivity later decreases. A theoretical interpretation based upon the solid electrolysis of univalent ions aids in explaining the phenomena. The next speaker, R. Lichtenstein of the General Electric Corporation, discussed "Crystal Conduction Dosimetry". He described the measurement of total dose by determining the charge produced when potassium bromide crystals, previously exposed to gamma radiation, were illuminated with light.

Four papers were given on physico-chemical effects resulting from gamma irradiation. The first, "Features in the Development of a Two-Phase Water and Chloroform Dosimeter," by J. C. Swartz of Consolidated Vacuum Corporation, discussed the release of hydrochloric acid from alkyl halides and the measurement of the acid concentration by both conductivity and  $Q$  measurements on the aqueous phase. J. Steigman of Brooklyn Polytechnic Institute, in a paper entitled "Chromophore Groups on Polymer Chains and Their Use in Radiation Studies," then described the attachment of the colored *p*-dimethylamino-*p*-diazocyanide-azobenzene onto a polystyrene chain. Colorimetry was then used to study the reaction of such compounds with free radicals. I. A. Berstein, who followed, presented the results of investigations conducted at Tracerlab, Inc. on "The Gamma Radiation Induced Polymerization of Acrylonitrile". The data indicate a strong dependency of both the rate of polymerization and the degree of polymerization on the intensity of the radiation. H. Linschitz, Syracuse University, spoke on "Ionization and Recombination Phenomena in Irradiated Glasses". Evidence was presented that certain absorption bands in illuminated organic glasses are due to solvated electrons. These electrons recombine with radical-ions when the glass is softened to form excited triplet states of the molecule, thereby emitting light. The use of this technique in studying radiation-induced processes was discussed.

The last phase of the seminar, under the chairmanship of I. Greenberg, included six papers on the optical effects of nuclear radiations. "Formation of 'Foreign Atoms' in Glasses," by W. Weyl, Pennsylvania State College, showed that glasses are inherently less sensitive to ionizing radiations than crystals because of their ability to incorporate foreign atoms into their loose structure. Recent experiments on the effects of radiation on glasses containing noble metals were discussed. This was followed by "Radiation Induced Coloration in Solids," by L. Reiffel, Armour Research Foundation, who sketched the behavior of vitreous and crystalline material under high-energy gamma-ray bombardment.

The result of introducing long-range order in random glass networks on the coloration produced was interpreted in terms of energy transfer efficiency. H. Hoerlin of the Ansco Corporation then spoke on "The Response of Photographic Systems to Ionizing Radiations". He showed, with the aid of electron micrographs of the latent image in silver halide grains, that the intrinsic grain sensitivity and the mass absorption determine the over-all response of photographic systems. The next presentation was "Fluorescent Efficiency of Organic Compounds and Their Chemical Structure," by H. Kallmann of New York University. He compared the gamma-ray induced fluorescence of numerous aromatic compounds to show that systematic increases and decreases in fluorescent efficiency can be produced by particular side groups. These differences in efficiency can be correlated to two factors, the true probabilities of radiationless transitions and for radiation production.

"Thermoluminescent Dosimetry" was discussed by F. Daniels, University of Wisconsin, who discussed the release of light from lithium fluoride crystals previously exposed to nuclear radiations, when these were heated. The application of this phenomena to the development of an energy independent dosimeter was described. The final paper, by W. Ramm, Evans Signal Laboratory, "The Energy Dependence of Dosimetric Systems," reviewed the important factors which influence the response of radiation sensitive systems to gamma rays of varying energies.

Philip Shapiro

Signal Corps Engineering Laboratories

## American Physical Society

### Southeastern Section Meeting

The Southeastern Section of the American Physical Society held its 1953 Meeting jointly with other divisions of the APS at Duke University and the University of North Carolina on March 26, 27, and 28. The total attendance was more than 800. Members of the Section contributed to the program of research papers and to the session on the teaching of physics which was sponsored by the Section. During the meeting the Section elected Alvin Nielson of the University of Tennessee as chairman for 1953-54. The other officers are Sherwood Haynes, Vanderbilt, vice chairman; Dixon Callihan, Oak Ridge National Laboratory, secretary; and Robert Lagemann, Vanderbilt, treasurer. New members of the Executive Committee are Scott Barr and A. E. Ruark of the University of Alabama. Walter Gordy of Duke is the retiring chairman. The 1954 meeting of the Section will be held in Oak Ridge, Tennessee, April 1-3.

## AIEE Summer Meeting

### At Atlantic City this Month

The Summer General Meeting of the American Institute of Electrical Engineers is to be held this year in Atlantic City from June 15 to 19. Expected to be the

largest summer meeting in the history of AIEE, the gathering marks the 50th anniversary of the Philadelphia Section, host organization for the meeting. Technical sessions on electronics, computers, communication, and numerous other topics are scheduled.

## Impurity Phenomena

### Joint Symposium at Schenectady

The General Electric Company and the Eastern New York Section of the American Chemical Society will be hosts for the 1953 joint summer symposium of the Solid State Division of the American Physical Society and the Division of Physical and Inorganic Chemistry of the American Chemical Society. The three-day symposium will be held June 16-18 at the G-E Research Laboratory, Schenectady, N. Y. Twenty-seven papers are listed in the program. The main subjects to be treated include coloration of solids by impurities, activators in luminescent crystals, the photographic process, analysis for trace impurities, and the role of impurities in semiconductors and transistors. Requests for additional information should be directed to Dr. E. K. Bacon, Department of Chemistry, Union College, Schenectady 8, N. Y.

## American Physical Society

### Rochester Meeting in June

About 15 invited and 80 contributed papers will be presented at a three-day meeting of the Physical Society at the University of Rochester June 18-20. A meeting of the Society's Division of Electron Physics is also scheduled at Rochester on the same dates.

## Fluid Dynamics

### APS Division Meeting at Penn State

The next meeting of the Division of Fluid Dynamics of the American Physical Society will take place at Pennsylvania State College from July 1 to July 3. It is expected that the program will include sessions on hydrodynamics and on rarefied gases. Several sessions will also be devoted to other regions of interest in fluid dynamics. Requests for additional information about the meeting should be directed to the Secretary of the Division, Dr. Francois N. Frenkiel, at the Applied Physics Laboratory of The Johns Hopkins University, Silver Spring, Maryland.

## Nobel Prize Physicists

### To Meet in Germany this Summer

A meeting of Nobel Prize Winners in Physics will be held June 29th to July 2nd at Lindau, Bavaria. Among the speakers will be Heisenberg, von Laue, Dirac, Soddy, and von Hevesy. Members of the American Physical Society are invited to attend. They should write to the Permanent Committee for the Meetings of Nobel Prize Winners, Fischergasse 37, Lindau, Bodensee, Germany.

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