



NEWSLETTER

Published by the American Society for Photobiology /

1340 Old Chain Bridge Road, Suite 300 / McLean, Virginia 22101 / (703) 790-1745

Editor: Thomas P. Coohill, Depts. of Biology and Physics,
Western Kentucky University, Bowling Green, KY 42101 tel.: (502) 745-3697

No. 81 July 1984

ASP - Newsletter

Photochemistry and Photobiology in Italy - from the European Photochemistry Society Newsletter

In the last 25 years photochemistry has spread widely in Italy. Currently, research is now being carried out in most Italian universities, in some research centres of the Consiglio Nazionale delle Ricerche (CNR) and in a few other laboratories of public and private institutions. Fairly intense activity is also being pursued over quite a wide spectrum of different areas related in some way to photochemistry.

Two men contributed towards the launching and development of photochemistry and photophysics in Italy:

- Professor Guido Sartori (died in 1981), Director of the Laboratory of General and Inorganic Chemistry at Rome University for many years, President of the Chemistry Committee of the CNR and Vice-President of the CNR (1970-75), President of the Societa Chimica Italiana (1966-72), whose many interests included the spectroscopy and photochemistry of coordination compounds;
- Professor Giovanni Semerano (retired in 1978), Director of the Physical Chemistry Institute at the University of Padua (1938-60) and of the Ciamician Institute in Bologna (1960-77), founder of the FRAE Institute of the CNR in Bologna in 1968 and its Director until 1976, who had, among his many interests, those in the fields of radiation chemistry and photographic science.

Despite the fact that Italy was the birthplace of organic photochemistry due to the pioneering work of Giacomo Ciamician at the turn of the century, after his death, no important photochemical research work appeared in the literature for more than three decades. At the end of the '50s or the beginning of the '60s, interest in photochemistry grew in Bologna (at the Ciamician Institute) with V. Carassiti and V. Balzani, and in Padua, with G. Semerano and U. Mazzucato. Later, Carassiti moved first to the University of Catania and then to that of Ferrara, where he founded the CNR Research Centre for the Photochemistry of Coordination Compounds; Semerano moved to Bologna, where, in 1968, he founded with the help of A. Breccia, J.H. Baxendale, V. Balzani and U. Mazzucato, the Institute of Photochemistry and High Energy Radiations (FRAE) of the CNR; Mazzucato moved to the University of Perugia where he set up a photochemical laboratory in the Chemistry Department.

Another important group started to work in a related field (photobiology of furocoumarins) on the initiative of the late Professor L. Musajo who, together with G. Rodighiero, created the CNR Research Centre for Drug Chemistry and Biologically Active Products at the University of Padua in 1968.

In addition to those of Bologna, Padua, Ferrara and Perugia, other laboratories at the Universities of Rome and Catania started, in the '60s, to work in the field of inorganic photochemistry. Later, in the '70s, other more or less numerous groups came to the fore, thus extending over all the peninsula the presence of scientific interest in the various branches of photochemistry and related fields.

At present, the most developed areas of photochemistry in Italy are the physical and inorganic ones. Because of the physico-chemical nature of the original schools of the research workers who now have directive or pre-eminent roles in the various research centres, most Italian photochemical laboratories almost always use a physical approach in their work, both in theoretical studies and in experimental research with pulsed techniques, lasers and physico-chemical methodologies.

Inorganic photochemistry is also widely developed and is probably the most highly regarded at an international level. The strongest groups are in Bologna and Ferrara but other groups are also present elsewhere (Catania, Rome, Perugia and Messina).

Organic photochemistry, despite Ciamician's heritage, is less developed or at least it was so until some years ago. The longest and best established group is that of Pavia but small groups are now active in Siena, Naples, Milan, Padua and Florence and signs of interest are now being found in Ferrara and Bari, too.

Research in theoretical photochemistry is now being carried out in Bologna, Modena and Pisa; in gas phase photochemistry, at the CNR Research Campus of Montelibretti (Rome) and at the Molecular Spectroscopy Laboratory of the Ente Nazionale per le Energie Alternative (ENEA) in Frascati (Rome).

Photobiology is particularly well developed in Padua but signs of interest are now present in several groups elsewhere.

Research in applied photochemistry is being carried out at the FRAE Institute in Bologna (photoconductors, polymer photochemistry, photographic science), at the laboratories of the Centro Informazioni Studi Esperienze (CISE) in Segrate (Milan) (laser-induced deposition of semiconductors) and at the Universities of Turin (photocatalysis), Milan (photoresponsive membranes, photochemical grafting), Bologna (photochemical reactors and radiative transfer), Ferrara (atmosphere photochemistry) and in a few other research centres.

New Books

Sources and Applications of Ultraviolet Radiation
by Roger Phillips, Academic Press London etc. 1983.
440 pp. ISBN 0.12.553880.4. L 35.00.\$ 60.00. DMca. 170

The book comprises 15 chapters each of them having its own alphabetically ordered reference list up to 1982.

1. Applications of ultraviolet radiation (45 p.)
 2. The nature of light (9 p.)
 3. Photochemistry and photopolymerisation (55 p.)
 4. Radiometry (49 p.)
 5. Incandescent sources (7 p.)
 6. Gas discharges (14 p.)
 7. The low pressure mercury lamp (20 p.)
 8. The medium pressure mercury lamp (7 p.)
 9. Metal halide lamps (17 p.)
 10. Electrodeless lamps (15 p.)
 11. Xenon lamps (34 p.)
 12. Lasers (21 p.)
 13. Miscellaneous sources (9 p.)
 14. Ultraviolet irradiators (40 p.)
 15. Hazards of ultraviolet radiation (20 p.)
- Index (7 p.)

Positions Available

Plant Molecular Biologist. The Light and Plant Growth Laboratory of the Plant Physiology Institute at the USDA/ARS Agricultural Research Center, Beltsville, Maryland, anticipates an opening in the Fall of 1984 for a staff research scientist. The objective of research to be conducted is basic knowledge of genetic mechanisms that function in the regulation by light of plant growth and development. Possible research areas include the regulation of photosynthate partitioning and of photoperiodic sensitivity in crop species. Salary: GS-11/12 (\$25,366-39,519) based on qualifications and experience. Send curriculum vitae, publication list, summary of research interests, and names of three references to: Dr. William J. VanDerWoude, Bldg. 046A, Agricultural Research Center, Beltsville, MD 20705. Telephone (301) 344-3607. An official position announcement will be sent to all applicants in mid-summer. Candidates must be U.S. Citizens. An Affirmative Action/Equal Opportunity Employer.

Research associate appointment. Organic photochemistry (aromatic and heteroaromatic photosubstitutions), electronic spectroscopy, quantum organic chemistry (π -electron systems), heterocyclic chemistry (synthesis of potential cancerostatic agents). Position available immediately. Stipend and conditions negotiable. Send curriculum vitae, copies of M.S. and Ph.D. diplomas, list of publications, summary of research interests, and three letters of recommendation to: Prof. Cyril Parkanyi, Chairman, Department of Chemistry, The University of Texas at El Paso, El Paso, TX 79968-0513.

REQUEST FOR PROPOSALS

The Lighting Research Institute, Inc. (LRI), a not for profit organization formed in 1982 to promote and sponsor basic and applied research and development in North America for all forms of lighting is making its annual request for proposals based on its research agenda. Proposals are being sought for the following research areas with an emphasis on those areas which have direct human application:

PHOTOBIOLOGY - to determine the possible effects of illumination on human health for:

1. Systemic effects, through the eyes, of the visible component of the spectral power distribution of illuminants, such as neuroendocrine effects, and biological rhythms.
2. Systemic effects through the skin, such as ultraviolet induction of skin cancer and immunological effects.
3. Direct physical-chemical hazards such as retinal degradation, and cataract induction.

VISION - to determine the relationship between light and vision so that the lighted environment can be designed to provide adequate and comfortable conditions for seeing by conducting research toward:

1. Prediction of color appearance and color discrimination.
2. Visual Performance-(perception, visibility, and dynamic, e.g. transient adaptation.).
3. Cross-cutting areas (color preference, discomfort glare)

SYSTEMS APPLICATION - Engineering, Physical Sciences, and Economic Research on Lighting Systems to formulate and verify:

1. Models of Light
2. Models of Lighting Systems
3. Measurement, Test, Evaluation and Design Methods.

PSYCHOLOGY - to investigate human responses and behavior in real environments by conducting studies of:

1. How the distribution of luminances and color affects human feelings, mood, behavior, fatigue, and productivity.
2. Psychological/aesthetic reaction to street and highway lighting encompassing discomfort glare, safety and fatigue.

Criteria for selection of proposals for funding will be based on scientific and technical merit, and also on: appropriateness for funding by LRI based on the research agenda; timing - both long and short term will be sponsored with an initial leaning given to short term, risk; and significance of the research based on criteria for a given research area (e.g., health consideration for photobiology).

The deadline for receipt of proposals is September 14, 1984. For a copy of the Institute's Research Agenda, Proposal Application, and/or further information please contact:

Richard L. Vincent
Program Manager
Lighting Research Institute
345 East 47th Street
New York, N.Y. 10017
(212) 705-7918



Postdoctoral Fellowship Biophysics-Hematology. A position is immediately available to study biophysical properties of heme-proteins, with an emphasis upon fluorescence spectroscopy and protein purification. The Fellow will interact with members of the multidisciplinary Division of Hematology. Salary range: \$14,040 - \$16,236 (plus fringe benefits) depending upon experience. Call or send curriculum vitae and names of references to: Dr. Rhoda Elison Hirsch and Dr. Ronald L. Nagel, Department of Medicine, Albert Einstein College of Medicine, 1300 Morris Park Avenue, Bronx, N.Y. 10461, 212-430-2186. The Albert Einstein College of Medicine is an equal opportunity affirmative action employer.

Postdoctoral positions for research in the area of visual pigments, bacteriorhodopsin, their analogues and photochemistry of polyenes. The projects are directed toward a better understanding of the primary photochemical processes in these systems and structural information of the binding sites. Two possible openings--one, preference given to persons trained in biochemistry or biophysics and with experience in nmr studies of macromolecules; the second, preference given to persons trained in spectroscopy and with interest in photochemistry of molecules in confined media. Starting date: flexible (approximately January 1985). One year initial appointment, renewal possible. Salary: minimum \$16,000/yr. Send curriculum vitae, a minimum of two letters to: Professor Robert S.H. Liu, Chemistry Department, University of Hawaii, 2545 The Mall, Honolulu, HI 96822.

Postdoctoral position - Role of oxygen radical damage to DNA in carcinogenesis. A two year appointment starting Sept. 1, 1984 is available. \$20,000 per year (includes 25% fringe benefits). Successful applicant will compare extent of oxygen radical species and non-oxygen radical species damage to DNA produced under a variety of conditions. Skill in tissue culture techniques and DNA biochemistry are desirable. Call Dr. Helene Z. Hill at (201) 456-3421 or send inquiry and C.V. to Dr. Hill, MSB-E 577, Section of Cancer Biology, New Jersey Medical School, Newark, NJ 07103.

Special Fellowship in Photosynthesis

Place: Biochemistry Institute, Odense University, Funen Island, Denmark.

Stipend: Between about US \$ 20,000 and 21,000 per year including fringe benefits (pension and paid vacation). For most non-Danes the stipend should be free of Danish taxes, but may be subject to taxation in the fellowship holder's home country.

Duration: The fellowship can begin on 1 January, 1 February, or 1 March 1985 and will run for 11 1/2 months. It may be possible to offer a subsequent appointment subject to Danish taxation for a few additional months.

Research: The overall area of interest is energy conversion in membranes of green photosynthetic bacteria. We are presently studying the organization of bacteriochlorophyll c in chlorosomes of Chlorobium by second derivative absorption spectroscopy and circular dichroism spectroscopy, and we have evidence for the existence of aggregates each containing several chlorophyll molecules. We hope to formulate a working model of the bacteriochlorophyll c--protein complex in the near future. In addition we are attempting to prepare a membrane-free reaction center complex with respectable photochemical activity. So far we have found that relatively gentle chaotropic agents like NaI and NaSCN remove bacteriochlorophyll a--proteins from the cytoplasmic membrane just as well as does guanidine HCl, which damages the reaction center. Lastly we are working on the chemical and functional characterization of a novel aminolipid from the cytoplasmic membrane from Chlorobium.

Further information: Write or telephone Prof. John Melvin Olson, Biochemistry Institute, Odense University, Campusvej 55, DK-5230 Odense M, Denmark. tel: 45(09) 15 86 00 (2407 or 2441).

Meeting

1985 Feb. 10-14 Update in Laser Medicine, Surgery, and Research, a multi-disciplinary symposium to be hosted by Pacific Laser in Honolulu, Hawaii. For more information, contact Pacific Laser (808) 523-6842 or write Jasmin T. Flores, Symposium Coordinator, 119 Merchant St., Suite 601, Honolulu, Hawaii 96813.

Gordon Conference

1985 Jan. 28-Feb. 1 Protons and Membrane Reactions, Santa Barbara, California. This meeting includes aspects of photochemical conversion of solar energy. For more information contact: Gordon Research Conferences, Gordon Research Center, University of Rhode Island, Kingston, RI 02881, tele: (401) 783-4011. Conference chairman is Lester Packer, Department of Physiology, Univ. of California - Berkeley.

News from AIBS

Life Science Funding

Funds for basic research in the Biological and Medical Sciences within the Department of Defense have increased each year since 1982 as shown in the following table:

Service	DOD FUNDS FOR BIOLOGY AND MEDICAL RESEARCH			
	(\$ in millions)			
	FY 82	FY 83	FY 84	FY 85 (proposed)
Army	36.9	38.3	50.6	53.5
Navy	17.9	17.7	18.5	20.3
Air Force	8.1	8.3	9.3	10.9
Total DOD*	64.9	66.3	79.8	86.7

*Total figures from the three services will be less than the total DOD figures because a small amount of funding is located centrally within DOD and its agencies.

In addition to support for basic research, the \$30 million university research instrumentation program, which includes support for research equipment in the biological sciences, continues to be divided equally between the three services.

New Public Responsibilities Manager

Judith S. Wortman, M.A., has been named the new manager of the Public Responsibilities program of the American Institute of Biological Sciences. Wortman, a health researcher, educator, and editor, was most recently director of federal relations in Washington for the California State University, which includes 19 individual campuses and some 18,000 faculty members. The AIBS Public Responsibilities Program is the arm of the Institute that represents the interests of professional biologists in national public policy affairs. By providing information and services to concerned biologists everywhere, the Program establishes essential liaison between the executive and legislative bodies at the national and state level and the concerns of all life scientists for the protection of life and improvement of health that research and conservation can bring.

New Editor of Bioscience

Ellen W. Chu, Ph.D., has been named the new editor of Bioscience, the monthly magazine of the American Institute of Biological Sciences. Chu, a writer, editor, teacher, and research biologist, currently teaches scientific and technical writing and science journalism at the Massachusetts Institute of Technology in Cambridge, Massachusetts. AIBS is indeed fortunate to have a person of Chu's interests and qualifications to provide leadership for a publication that offers professional biologists a broader view of the total discipline and its public policy dimensions than can be found in the primary research journals. She assumed her new position on May 1, 1984.

AMERICAN SOCIETY FOR PHOTOBIOLOGY

1340 Old Chain Bridge Road, Suite 300
McLean, Virginia 22101

Non-Profit Org.
U. S. POSTAGE
PAID
Bethesda, Md.
Permit No. 45126