

*Obituary*

## Professor Ta-shue Chou (1950-1999)

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**Professor Dr. Ta-shue Chou**

(26 October 1950 - 25 February 1999)

Professor Ta-shue Chou, who died of cancer on 25 February 1999 at the age of 50 and spent much of his academic career as Research Professor of Organic Chemistry, at the Institute of Chemistry, Academia Sinica, Taipei, Taiwan, Republic of China, was an editorial board member of the international chemistry journal *Molecules*. He was Director of the Institute of Chemistry, Academia Sinica for nine years (1987-1996) and the President of the Chinese Chemical Society (1993-1994). Among his many successful activities were important contributions to the academic exchange between the Mainland China and Taiwan.

In 1995, when I started the launch of *Molecules*, Professor Chou immediately installed the first website for this journal and for our international organization MDPI at <http://www.sinica.edu.tw/chem/service/Mol/index.html> at my request. This website is still active. He

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was a very supportive member of the editorial board and an enthusiastic author of the electronic journal *Molecules*, even when the publisher Springer Verlag suddenly terminated the publication contract and we decided to publish through MDPI itself. Thanks to Professor Chou and many other chemists' support, *Molecules* has become a well-known international journal. All papers published since 1997 (vol. 2) have been indexed and abstracted by several leading indexing and abstracting services, including Chemical Abstracts; CAPLUS; Science Citation Index Expanded; SciSearch, Research Alert; Chemistry Citation Index; Current Contents/Physical, Chemical & Earth Sciences.

Professor Chou also served as a member of the International Scientific Advisory Committee of ECSOC-1 and ECSOC-2 of the International Electronic Conference on Synthetic Organic Chemistry. The ECSOC conferences were supported by the journal *Molecules*.

Last summer I was invited to give a lecture at the First International Symposium for Chinese Medicinal Chemistry (ISCMC 1998 Taipei) in Taiwan and planned to meet Professor Chou for the first time. Unfortunately I failed to get a visa and the trip was canceled. We talked on the phone several times and exchanged many e-mails. However, we never met. I knew he was struggling with cancer and believed that he would win. I was very sad to learn that I had suddenly lost a mentor.

### **Accomplishments in Service [1]**

Having served as the Director of the Institute of Chemistry, Academia Sinica, for nine years (1987-1996) and the President of the Chemical Society in Taipei for two years (1993-1994), Professor Chou made great efforts to promote the international activities of the chemistry community in Taiwan. In the last decade, the R.O.C. government gave strong support to basic research and the quality of chemistry research improved significantly. International activities not only further stimulated the domestic chemists to work harder, but also made foreign chemists take note of the development in this region. Among the most successful activities carried out, Professor Chou organized the first "International Symposium on Organic Reactions" (ISOR) in 1988. This biannual symposium series mainly involved chemists from Japan, Taiwan and some other Asian countries. The success of this symposium series served as a catalyst for promoting academic exchange programs between the chemistry communities of Japan and Taiwan. The interaction among chemists in the areas have become more and more frequent.

Professor Chou was a member of the International Organizing Committee of the "International Symposium for Chinese Organic Chemists" (ISCOC). The first ISCOC was held in Shanghai in 1990, at the time academic interaction across the Taiwan Strait was essentially zero. Professor Chou was the coordinator of the Taiwan side and organized a delegation of forty chemists to go to Mainland China. It was a big break through. The 3rd ISCOC was organized by Professor Chou in 1994 when about sixty organic chemists from Mainland China came to Taipei to participate in the Symposium. The size of the Mainland Chinese delegation was a record high. The success of the biannual ISCOC stimulated the development of a closer relationship among Chinese organic chemists all over the world. The most recent ISCOC was held in Tianjin in 1998.

In addition to promoting the chemistry activities in Asia, Professor Chou also worked very hard to establish relationships of the Taiwan chemistry community with other countries. Professor Chou was the chairman of the first ACS/CCS joint venture in chemistry (1994 International Symposium on Asymmetric Synthesis), the chairman of the first NSC/CNRS collaborative program in chemistry (Sino-French Symposium on Organic Chemistry), and the chairman or co-chairman of many other important international symposiums.

### Accomplishments in Academic Pursuits

As a research fellow at Academia Sinica, Professor Chou devoted his time to the chemistry of 3-sulfolenes for more than a decade. In 1984, Professor Chou began the study of the deprotonation/substitution reaction of 3-sulfolene and developed an ideal methodology using 3-sulfolene as the precursor for a butadienyl-1-anion. The regioselectivity nature of the substitution reaction and the stereospecific nature of the extrusion of sulfur dioxide from 3-sulfolenes rapidly made 3-sulfolenes building blocks for the construction of interesting organic molecules. When the deprotonation/substitution sequence is accompanied by subsequent intramolecular Diels-Alder reactions, a variety of bicyclic and multicyclic skeleton can be constructed. This strategy was utilized not only by Professor Chou but also by other research groups in the world as a key step to synthesize complex natural products. Further more, Professor Chou extended the study and also made 3-sulfolenes equivalents as precursors to butadienyl-2-anion, butadienyl-1,4-dianion, butadienyl-1,1-dianion, butadienyl-1-cation, butadienyl-2-cation, and so on. Subsequently a wide variety of substituted butadienes can be conveniently prepared from 3-sulfolene. Professor Chou was invited by the 4ACC to deliver a lecture in Beijing to review his accomplishment in this area.

Professor Chou's research also covered ultrasound chemistry, especially the use of ultrasonically dispersed potassium (UDP) in organic synthesis. UDP was found to be an efficient reducing agent for C-S bond cleavage of sulfones as well as a promoter for cheletropic extrusion of sulfur dioxide from substituted 3-sulfolenes. The regio- and stereoselectivity of the C-S bond cleavage made UDP a useful reagent for the preparation of important intermediates for organic synthesis. Professor Chou also utilized ultrasound to promote the lithium-mediated C-P bond cleavage reactions. Due to his success in this area of research, Professor Chou was invited to be an international advisory editor of the journal *Ultrasound: Sonochemistry*.

The most recent achievement of Professor Chou's research was in the area of heteroaromatic *o*-quinodimethanes. Professor Chou developed several general synthetic approaches, each of which can be used to prepare a variety of herteroaromatic-fused 3-sulfolenes, the ideal precursors for the corresponding *o*-quinodimethanes. Previously, the chemistry of heteroaromatic *o*-quinodimethanes was of interest mainly to physical organic chemists, but not to synthetic organic chemists. Professor Chou's research results demonstrated that functionalization of the precursors can be easily achieved, so that their synthetic applications toward the construction of complex multicyclic heterocycles are now

possible. The review article "Heteroaromatic *o*-Quinodimethanes" authored by Professor Chou [2] is perhaps the most frequently cited reference in this field of research. Professor Chou was invited by the Organic Chemistry Division of the 7ACC in Hiroshima to present an invited lecture on his recent progress in this area.

Professor Chou's curriculum vitae is summarized here: B.S., National Taiwan University (1972); Ph.D., Organic Chemistry, The University of Texas at Austin, USA (1979); Food Scientist, Food Industrial Research and Development Institute (1979-80); Associate Research Fellow (1980-85), Research Fellow (1985-1999), Academia Sinica; Associate Professor (1981-85), Professor (1985-1999), National Taiwan University; Research Fellow, National Science Council (1982-86); Member, American Chemical Society, Chinese Chemical Society. Sun Yat-Sen Award (1986), Outstanding Research Award of National Science Council (1986-93). President, Chinese Chemical Society (1993-94).

Professor Chou is survived by his wife Jane, daughter Rita and son Danny.

He will be remembered by many colleagues, friends and students in Taiwan, in the Mainland China and in many other countries.

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### References and Notes:

1. The following two parts were adapted from the websites of Institute of Chemistry, Academia Sinica, Taipei, Taiwan, Republic of China. Professor Ta-shue Chou's website is <http://www.sinica.edu.tw/~tschou/>.
2. Chou, T.-s. Heteroaromatic ortho-Quinodimethanes. *Rev. Heteroatom Chem.* **1993**, 8, 65-104.