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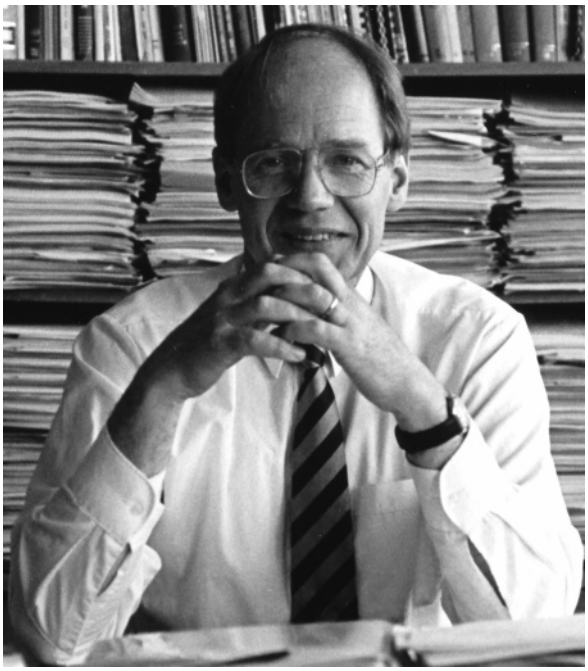

Photo courtesy of Adolf Clemens

Jürgen Troe − An Appreciation

In the fall semester 1970/71 a group of students awaits their professor in the old Physical Chemistry Institute of Walther Nernst at Göttingen University. An advanced course on photochemical processes has been announced. Some of the students obviously know each other well, presumably his graduate students, while others have come to follow this course just for interest in the topic. There is talking and murmuring, time passes, and after some fifteen minutes suddenly this youngster among the professors appears with radiating laughter: "I still had to change the diapers of our baby and that paperwork took too long" −no invented excuse, just the simple truth. Then he immediately starts to talk about the photolysis of NO_2.

It is a characteristic trait of Jürgen Troe, simply to state the truth in such situations, potentially embarrassing to some, and not to search for alternatives. Who would not be taken with this frank attitude, and Jürgen has not lost this boyish charm even though the times of changing diapers are long since past. At a scientific meeting at Loccum, being asked whether a boldly extrapolated line in a diagram showing measurements and theoretical results arose from "experiment or calculation", Jürgen spontaneously rhymes "neither, it's from speculation", and the audience joins him in laughter.

As to paperwork, his scientific babies certainly still learn from him that a job is not finished until all the paperwork is done, a wisdom he retains as author of numerous papers, many of which he writes entirely by himself, as well as in his high functions in science administration. His scientific ingenuity, his fresh character of the young and courageous scientist, and his enormous efficiency quickly open him the doors to a splendid career. At the age of 30, he is full professor at the École Polytechnique Fédérale de Lausanne in Switzerland, and just four years later he receives and accepts the offer to take one of the most distinguished physical chemistry chairs in Germany, as successor to Wilhelm Jost at Göttingen University. In 1990, this already exceptional career is complemented by the additional directorship at the Max-Planck-Institute of Biophysical Chemistry, while retaining professorship and research group at the university. All along, he maintains his ties to the EPFL as Professeur honoraire − "très apprécié par ses collègues" as the

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Annuaire des professeurs de l'EPFL writes. When looking at the long list of his students, it becomes clear that he owes this success to his exceptional gifts both as a researcher and as an academic teacher. About 140 diploma (Master) theses and 125 doctoral theses were prepared under his direction and scientific guidance. His "short textbook" (with Wilhelm Jost) on physical chemistry has educated many generations of chemistry students in Germany. It cannot be the place here to analyze in detail the merits of his scientific achievements, laid down in more than 400 publications over the past four decades, not showing the slightest sign of reduced activity with increasing number of years and administrative burdens.

A key to understanding his scientific successes and achievements is clearly that he is among those few scientists in the modern world of physical chemistry who are able to understand and contribute in depth fundamental work in both theory and experiment. Often his deep theoretical understanding has led to simple experimental or theoretical solutions for difficult and important problems in reaction kinetics. His ingenious early experimental studies of the ultrafast primary kinetics of NO_2 dissociation employing photolysis under high pressure conditions is an early example followed by many later ones. His profound contributions to the theory of unimolecular reactions over wide temperature and pressure ranges are examples at the theoretical end of reaction kinetics. Jürgen Troe has consistently contributed important results in reaction kinetics at the highest level of quality and understanding. All his work is characterized by his search for a long-term durable increase of our scientific understanding of fundamental questions in reaction kinetics, and this goal has clear priority over flashy, quick successes and publicity.

On the other hand, Jürgen Troe has also contributed to simplified, more practically oriented approaches designed for complex situations where fundamental treatments become unfeasible. Examples are simple models for dealing with unimolecular and recombination reactions in atmospheric chemistry or combustion. At meetings on various applications in these areas, one invariably encounters a paper that makes use of one of Troe's simplified models and formulae.

Jürgen Troe's work has been honored by numerous distinctions and prizes, of which we shall mention here only the most important ones. In 1971 he received the Bodenstein prize (now renamed Nernst−Haber−Bodenstein prize) of the Deutsche Bunsengesellschaft für Physikalische Chemie, in 1980 the Centenary Medal of the Royal Society of Chemistry London, and in 1995 the Carus Medal of the Leopoldina at Halle, Germany, the world's oldest academy of science. He is a member of the Leopoldina, the Academy of Sciences at Göttingen, the Berlin-Brandenburg (formerly Prussian) Academy of Sciences, the Academia Europaea and the American Academy of Arts and Sciences. The Bunsengesellschaft awarded him with the Walther Nernst memorial medal, and he holds honorary doctorates of the University of Bordeaux and the University (TH) Karlsruhe.

It is impossible to conclude even such a brief survey without mentioning at least a few of the numerous ways in which the jubilee served the scientific community in an exemplary fashion on the national and international level. With his open-mindedness and his scientific enthusiasm, he initiated and chaired two successive collaborative research centers of the DFG on reaction kinetics and dynamics (SFBs 93 and 357), which for 27 years (from 1978 until 2004) provided the basis for Göttingen's position in this field. He chaired the physical chemistry (1984−1992) and chemistry sections (1988−1992) of the Deutsche Forschungsgemeinschaft, and was elected to its senate in 2002. He served as a member of the German Science Council (Wissenschaftsrat der Bundesrepublik Deutschland) during the crucial period between 1993 and 1998, when much of the restructuring of the former East German science landscape took place. As president of the Deutsche Bunsengesellschaft für Physikalische Chemie from 1999−2002 he helped launch PCCP, the joint journal of a number of European societies of physical chemistry. Since 2002, he has held the chair of the Board of Trustees (Universitätsrat) of the Universität Karlsruhe, playing a new role in reforming the system of German higher education.

Jürgen Troe's scientific contributions have had worldwide influence on the whole field of reaction kinetics. The list of scientific meetings he organized is long, as is the list of renowned lectureships he held. Since the early days in Lausanne, he has kept attracting senior scientists and young talented researchers alike to visit and join his group for fruitful exchange and collaboration. Many of his students have achieved important positions in industry and academia, ranging from simple professor to president of a major university. One may ask where he has found the energy for all this. An important factor, no doubt, is the heavenly gift of a fortunate nature and good health. Clearly his family has played a central role, with his wife Heli providing him with understanding and constant support for the four decades of their marriage and with their two children. Friends and colleagues regularly go into rapture about the extraordinary hospitality and attentiveness they have experienced at invitations to their home. Jürgen himself finds time for relaxation and creativity in his Swiss chalet above Lake Geneva and also loves playing the piano. In the spirit of this musical family tradition, at some scientific meetings the participants had a chance to listen to wonderful concertos given by his daughter Katharina who now is a professional cellist. On top of this, even the family chalet has its part in science as the memorable location where since 1978 Jürgen has hosted the members of the CODATA-IUPAC committee for hard work on the evaluation of rate data for atmospheric chemistry in a unique setting for dozens of times, the results being much appreciated and used by the scientific community worldwide.

May his scientific and non-scientific activities continue for many happy years.

Horst Hippler

Klaus Luther

Martin Quack

Jörg Schroeder

Guest Editors