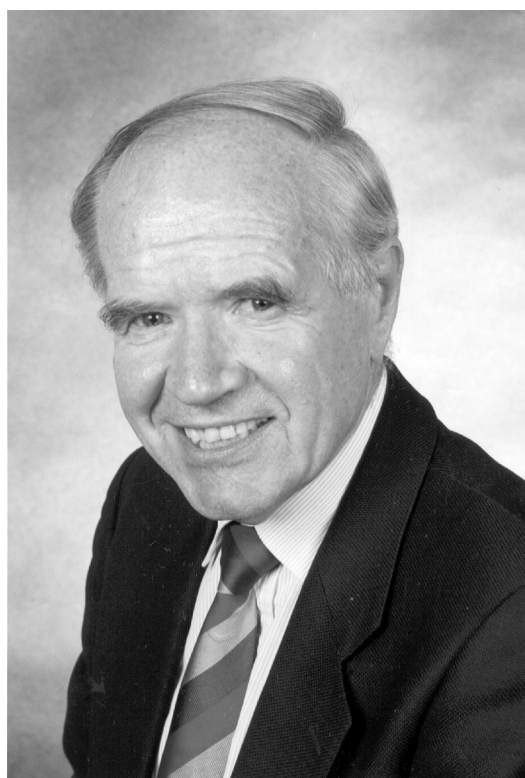


To Professor Dr.-Ing. Dr. h.c. mult. Karl Stephan on his 70th birthday



On November 11, 2000, Professor Emeritus Dr.-Ing. Dr. h.c. mult. Karl Stephan, Member of the Berlin-Brandenburgische Akademie der Wissenschaften, celebrates his 70th birthday. Prof. Stephan laid the foundation-stones of his career with the studies of Allgemeiner Maschinenbau at the Technische Hochschule Karlsruhe (1952–1956), receiving his Diplom-Ingenieur degree with excellence in 1956. Then, under the guidance of Prof. Baehr, he received the Doctor's degree with excellence in 1959 in Karlsruhe with the thesis "Wärmeübergang und Druckabfall nicht ausgebildeter laminarer Strömungen im Einlauf von Rohren und ebenen Kanälen". Finally, in 1963 he obtained the Habilitation degree in thermodynamics at the Technische Hochschule Karlsruhe with the thesis "Thermodynamik des Wärmeübergangs beim Sieden". He then left the Technische Hochschule Karlsruhe after his habilitation in order to acquire experience in industry. From 1963 to 1967 he was head of the research division "Heat and Flow Technology" (Wärme- und Strömungstechnik) of the Mannesmann AG in Duisburg-Huckingen. During the same period he gave lectures on thermodynamics at the famous Rheinisch-Westfälische Technische Hochschule (RWTH) Aachen. Although still very young, he was already well known in the scientific community and received his first offer of a professorship from Berlin in 1967. He spent three years as a Professor and Head of the Lehrstuhl II für Thermodynamik at the Technische Universität Berlin. Then he moved to the Institut für Thermo- und Fluidodynamik of the Ruhr-Universität Bochum, where he headed the Lehrstuhl für Wärme- und Stoffübertragung. After five years in Bochum he finally

moved to the Institut für Technische Thermodynamik und Thermische Verfahrenstechnik of the Universität Stuttgart. He there spent a long and most fruitful period as a University Professor. Although retired officially in 1996 one usually still finds him there working on science and related activities.

A number of 72 Doctor-Engineers can call him "Doktorvater", seven were habilitated under his supervision. Ten of his disciples now are university professors in Germany, one in Canada, and three are German professors at technical colleges (Fachhochschulen).

Prof. Stephan was frequently asked to visit as a Guest Professor or Researcher in scientific institutions all over the world. In 1974 he was invited by the South African Institution of Chemical Engineers and spent two months at the University of the Witwatersrand in Johannesburg and at the Council for Scientific and Industrial Research in Pretoria. In 1979 he was for three months a Visiting Research Professor at the Concordia University in Montreal, Canada, in 1982 for three months Directeur de Recherche Associé at the École des Mines, Paris, in 1985 for three months a Visiting Research

Professor at the Oregon State University in Corvallis, USA, and in 1992 Prof. Stephan was invited as a Fellow of the Japanese Society for the Promotion of Science and visited various Japanese universities.

Prof. Stephan contributed his knowledge and scientific experience to many national and international academic and scientific associations and committees. Only a few activities can be mentioned here. He was a member of the Scientific Council of the International Centre for Heat and Mass Transfer (1968–1986), a German Member of the Assembly for International Heat Transfer Conferences (1966–1985) and of the Executive Committee of the International Centre for Heat and Mass Transfer (1984–1988). From 1988 to 1991 Prof. Stephan was the President of Commission B1 (Thermodynamics) of the International Institute of Refrigeration in Paris and from 1991 to 1999 the Vice President and Section Head (B), and since 1999 a Honorary Member. From 1993 to 1999 he was the President of the Eurotherm Committee. Prof. Stephan also was an active and leading member of numerous German scientific or engineering associations, such as Deutsche Forschungsgemeinschaft (DFG), Gesellschaft Verfahrenstechnik und Chemieingenieurwesen (GVC) in the Verein Deutscher Ingenieure (VDI), and the Fakultätentag Maschinenbau/Verfahrenstechnik.

In recognition of his national and international scientific reputation, Prof. Stephan received numerous prestigious awards: in 1964 Preis des Deutschen Kältetechnischen Vereins, in 1965 Arnold-Eucken-Preis of the GVC, in 1990 Hall Thermotank Gold Medal of the British Institute of Refrigeration, in 1991 Landesforschungspreis Baden-Württemberg, in 1992 Arnold-Eucken-Medaille of the Forschungsgesellschaft Verfahrenstechnik. In 1997 he received the Emil-Kirschbaum-Medaille der Deutschen Vereinigung für Chemie und Verfahrenstechnik.

Two Honourable Doctor degrees were awarded to Prof. Stephan, in 1993 by the Technische Universität Berlin and in 1994 by the Martin-Luther-Universität Halle-Wittenberg.

In 1987 Prof. Stephan became a member of the newly founded Akademie der Wissenschaften zu Berlin (West) which was closed after the reunification of Germany in 1990. In 1993 Prof. Stephan became a member of the new Berlin-Brandenburgische Akademie der Wissenschaften, which demonstrates his esteem and respect in the scientific world.

Prof. Stephan authored or co-authored about 240 publications in journals, conference proceedings or as monographs. Beyond that he is an editor or editorial board member of recognized international journals, such as International Journal of Thermal Sciences, International Journal of Heat and Mass Transfer, International Communications on Heat and Mass Transfer, Experimental Thermal and Fluid Science, and International Journal of Heat and Technology.

His main fields of activity were and still are heat and mass transfer with phase change in multicomponent mixtures, thermophysical properties of multicomponent mixtures, refrigeration processes including their application, and heat transformation.

The goal of Prof. Stephan's research work was and is to combine the field of thermodynamics of multicomponent mixtures with that of heat and mass transfer in order to understand and solve engineering problems. Both branches of science provide the basics for most of the processes occurring in energy and process technology and only their combination yields the desired results. This is clearly manifested by Prof. Stephan's textbooks which are of the highest scientific and pedagogical standard. As a principal author he published the book "Thermodynamik—Grundlagen und technische Anwendungen", Volume 1 (1986, 1990) "Einstoffsysteme", and Volume 2 (1988, 1990) "Mehrstoffsysteme und chemische Reaktionen". Very well known is also his book "Wärmeübergang beim Kondensieren und Sieden" (1988) which has been translated and published in English under the title "Heat Transfer in Condensation and Evaporation" in 1992. Finally, the book of Baehr and Stephan "Wärme- und Stoffübertragung" should be mentioned which appeared as the third edition in 1998. As soon as an English version is available, the whole heat transfer community will profit from this excellent textbook. Other books were published on thermophysical properties, inter alia the book of Stephan and Lucas entitled "Viscosity of Dense Fluids" (1979).

It is far beyond the scope of this birthday laudatio to mention all the facets and highlights of Prof. Stephan's life for science and technology research. On top of all it must be stated that he has not only been an outstanding creative scientist in the fields of thermodynamics and heat and mass transfer but also a sympathetic and benevolent supervisor, teacher, doctor father and, above all, a good friend.

In the name of all scientific disciples we wish Prof. Karl Stephan all the best for his 70th birthday and many happy returns in good health, surrounded by his wife Edith and his sons Martin and Peter with their families.

*Prof. Dr.-Ing. Hein Auracher
Institut für Energietechnik, TU-Berlin*

*Prof. Dr.-Ing. Klaus Lucas
Lehrstuhl für Technische Thermodynamik, RWTH Aachen*

*Prof. Dr.-Ing. Wilfried Roetzel
Institut für Thermodynamik, Universität der Bundeswehr Hamburg*

It is with great pleasure that we associate the International Journal of Thermal Sciences with the tribute being paid to Professor Karl Stephan on the occasion of his 70th birthday.

In addition to the scientific excellence that he has demonstrated throughout his career, which is recognized internationally, we want to emphasize the important role he has played during the last four years in the reshaping and development of the *Revue Générale de Thermique* which became on January 1999 the **International Journal of Thermal Sciences**. His reputation among the scientific community and his proficiency in his function as a co-editor-in-chief have strongly contributed to the international development of our journal.

We would like to express, through the publication of this special issue, our friendship and our most sincere congratulations for all his accomplishments.

*Prof. André Charette
Prof. André Lallemand
Co-editors-in-chief of the IJTS*