

## PROFESSOR FRAN BOŠNJAKOVIĆ

### ON HIS 80TH BIRTHDAY



ON 12 JANUARY 1982 Professor Dr.-Ing. F. Bošnjaković will celebrate his 80th birthday. Students, colleagues and friends wish continued good health to a helpful friend and a patient and understanding teacher.

F. Bošnjaković was born in Zagreb, Yugoslavia. He studied and graduated in 1925 at the Technische Hochschule Dresden. Outstanding teachers were Timoshenko and Mollier. After 3 years in Zagreb he became assistant to Professor Mollier and Professor Merkel. In 1928 F. Bošnjaković received his Dr.-Ing. and in 1931 the *Venia Legendi* at the Technische Hochschule Dresden.

In 1933 he became professor for Thermodynamics at Belgrade and in 1936 at the University of Zagreb. To this university Professor Bošnjaković served as Dean and Rector and received the Honorary Professor's Degree. In 1953 F. Bošnjaković accepted the chair of Technical Thermodynamics at the Technische Hochschule Braunschweig, Germany, and in 1961 the chair of Thermodynamics of Air- and Space-Propulsion at the University Stuttgart. In the sixties he spent several years as a visiting professor at U.S. universities in Minneapolis (1961), Tuscaloosa and at Notre Dame (1968/1969).

The scientific activities of Professor Bošnjaković comprise the entire fields of both Thermodynamics and Heat and Mass Transfer.

Continuing the works of Mollier and Merkel, he has to be considered one of the pioneers of graphic representation of engineering thermodynamic and chemical processes. His unusual gift to combine engineering problems with diagrammatic representation led to numerous papers and several books dealing with two-phase mixtures, adsorption refrigerating processes, heat exchangers, combustion and gasification, chemical reactions, high temperature plasmas and in recent times even with solar collectors. In the meantime several techniques have been accepted internationally and had a far-reaching influence on engineers and industry.

In addition Professor Bošnjaković earned a reputation in his continuing fundamental efforts to make evident and to diminish irreversibilities in energy conversion processes. As early as 1938 he published a paper entitled "Fight against Irreversibilities" which initiated a series of investigations in this field and which made us aware of problems that we have to master today. In addition to this his contributions to

heat blockage in pipe evaporators and his fundamental ideas in nucleate boiling bubble growth should be mentioned.

Professor Bošnjaković was an excellent teacher. His lectures in the entire field of Technical Thermodynamics and in Heat and Mass Transfer provided a professional background for a great many students. From personal experience, I would say that a course from Professor Bošnjaković was an unforgettable experience. The influence of this teaching can be clearly found in his textbook *Technische Thermodynamik* Vols. 1 and 2, which was first published as early as 1935. This book meanwhile has experienced six revised and extended editions and translations into several languages. The latest edition is in preparation.

In recognition of his work he received an Honorary Doctor's Degree from the University Zagreb, Yugoslavia, and from the Technical University Aachen, Germany. Among other awards are the Grashof-Gedenkmünze of the Verein Deutscher Inge-

nieure (1969), the Golden Medal of the Associazione Termotechnica Italiana, Padova (1970) and an award from the Institut Français des Combustibles et de l'Energie, Paris (1970).

After his retirement in 1968 Professor Bošnjaković continued his scientific activities, devoting efforts to, among others, radiation problems as solar engineering, a photon gas version of the Stefan-Boltzmann Law and to the question about an upper temperature limit. A booklet entitled *Zur Thermodynamik des Sonnenkollektors* (Thermodynamics of Solar Collectors) was published just recently.

His innovative ideas combined with analytical approaches for the solution of engineering thermodynamic problems inspired a large number of his students and associates, which today are active in all parts of the world. We wish a happy birthday, continuing health to him and his wife Zlata and many more years of successful accomplishment.

H. BEER