

## PROFESSOR WARREN M. ROHSENOW ON HIS 60TH BIRTHDAY



PROFESSOR Warren M. Rohsenow celebrated his 60th birthday this year. He was born on 12 February 1921 in Chicago. His German grandparents emigrated to the U.S.A. in the second half of 19th century.

He attended Northwestern University where he received his B.S. degree in Mechanical Engineering. Shortly afterwards he transferred to Yale University where he received M.Eng. degree in 1943 and D.Eng. degree in 1944. At Yale, as teaching assistant in Mechanical Engineering, he taught laboratory courses in Steam Power and Automotive Engineering, and from 1943 to 1944, as instructor in Mechanical Engineering, he gave classes in Thermodynamics and Heat Power.

From 1944 to 1946 he served as a Lieutenant in the U.S. Navy and was assigned to the Gas Turbine Division, U.S. Navy Engineering Experiment Station in Annapolis, Maryland. He was also consultant to NDRC—Columbia University group on aircraft component design—from 1943–1945. This early work was mostly in the area of gas turbine performance, heat transfer measurements and conduction heat transfer.

In July 1946 he joined the Mechanical Engineering Department of the Massachusetts Institute of Technology where his appointment marked the beginning of an era for that department in the field of heat transfer. Shortly after his arrival the basement of building No. 7 at MIT became what is now known as the MIT Heat Transfer Laboratory. The work on

phase-change heat transfer and two-phase flow carried out there has been at the forefront of this field since the 1950s and many of the findings have enjoyed widespread application in industry. Professor Rohsenow has always emphasized the contributions of both students and colleagues to the international reputation of the MIT Heat Transfer Laboratory.

The classroom teaching of heat transfer at MIT, headed by Professor Rohsenow, has always placed strong emphasis on fundamentals and practice-oriented problems. The pioneer text by W. H. McAdams was used initially, supplemented by classroom notes prepared by Professor Rohsenow. Most of this material on heat and mass transfer was ultimately published in the book *Heat, Mass and Momentum Transfer* by Rohsenow and Choi (Prentice-Hall, 1961). The book is still one of the texts used at MIT for the popular advanced heat transfer course.

Professor Rohsenow has authored or co-authored well over 100 journal papers and many technical reports and conference presentations. He is senior editor of the *Handbook of Heat Transfer* (McGraw-Hill, 1973). He also edited *Developments in Heat Transfer* (MIT Press, 1964), and has contributed chapters to a number of handbooks and books on engineering.

Probably his most important contributions in heat transfer have been in boiling and condensation. The analysis and correlations presented in his two early

papers (A method of correlating heat transfer data for surface boiling of liquids, *Trans. ASME* 74 (6), 1952; and Heat transfer with boiling under natural and forced convection, *Symposium on Heat Transfer at University of Michigan, July 18-19, 1952*, University of Michigan Press, Ann Arbor, 1952) are landmarks in this area of heat transfer.

Beyond being an outstanding leader in heat transfer research, Professor Rohsenow is a mechanical engineer with deep insight into engineering problems in general and a wealth of information on matters involving technology development. He has been a consultant to many major corporations, has served on a number of U.S. government committees, and has lectured all over the world on various aspects of heat transfer. His efforts, stature and leadership have certainly contributed to MIT's reputation as one of the world's leading research and teaching centers.

All of Professor Rohsenow's work at MIT has been intimately connected with education. Most of his research was organized to involve graduate students working towards their degrees. He is known as an outstanding educator capable of developing the individual talents of his students while at the same time instilling in them the self-confidence necessary for professional success. This is reflected in the list of students who completed their doctorates with Professor Rohsenow over the past thirty years\*: J. A. Clark, P. Griffith, R. Nickerson, V. S. Arpaci, J. C. Chato, P. J. Berenson, M. M. Chen, A. E. Bergles, R. S. Dougall, S. P. Sukhatme, W. F. Lavery, P. J. Marto, N. J. Todreas, M. M. Yovanovich, B. B. Mikic, D. G. Kröger, R. Forslund, I. Shai, S. Bae, J. S. Maulbetsch, S. J. Hynek, C. W. Deane, S. J. Wilcox, R. K. Sakhuja, J. J. Lorenz, D. P. Traviss, O. C. Iloje, D. N. Plummer, W. Mack, A. Singh, E. N. Ganic, G. E. Kendall and G. L. Yoder.

Many of these former students have gone on to professorships at leading institutions, not only in the U.S., but across the globe. Others have moved into leadership positions in industry and government.

Professor Rohsenow has been a very active member of the ASME since 1943. He was one of the early advocates of the "International Assembly for Heat Transfer Conferences" founded in 1966, which organizes the international heat transfer conference held every four years. Also, he was one of the founders of the

International Center for Heat and Mass Transfer in Yugoslavia and a founding member of the Editorial Advisory Board of the *International Journal of Heat and Mass Transfer*. He also serves on the Editorial advisory board of several other journals.

His outstanding contributions to the field of heat transfer have not gone unnoticed. A partial list of his awards includes:

- Pi Tau Sigma Gold Medal Award of ASME (1951);
- Yale Engineering Association Award for Advancement of Basic and Applied Science (1952);
- Junior Award of ASME for Boiling Heat Transfer Correlation Method (1952);
- Merit Award, Northwestern University (1955);
- Fellow, American Academy of Arts and Sciences (1956);
- ASME Heat Transfer Division Memorial Award (1967);
- Fellow, American Society of Mechanical Engineers (1969);
- Max Jakob Memorial Award (1971);
- Member, National Academy of Engineering (1975).

Although occupied with MIT and many other professional responsibilities Professor Rohsenow is a devoted husband, father and grandfather. He and his wife Towneley raised five children, and to date, two of them have chosen university professorships as a career. A visit with the Rohsenow family is always a pleasure. Graduate students are frequent guests in their house, where they can play one of a dozen instruments in the "orchestra room". Professor Rohsenow, a first-class musician, is well remembered by students from all MIT departments for his outstanding performance on the piano especially during the Christmas festivities.

Professor Rohsenow is currently busy with his research on non-equilibrium effects in post-dryout heat transfer and thin film CHF-phenomena. On behalf of his former students, his colleagues and his friends from all over the world we wish him a happy birthday and many more years of successful accomplishments.

E. N. GANIC  
J. P. HARTNETT  
University of Illinois, Chicago

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\*With apologies for any omission—E.N.G. and J.P.H.