

MEN OF SOVIET SCIENCE

OSKAR MOISEEVICH TODES

(ON HIS SIXTIETH BIRTHDAY AND FORTIETH YEAR OF
SCIENTIFIC WORK)



January 5, 1971, marked the 60th birthday and 40 years of scientific activity of the Soviet researcher well known in the field of thermal stress processes and dispersion systems, Professor and Doctor of Mathematical Physics O. M. Todes. Graduating in 1930 from the Department of Mathematical Physics of the M. I. Kalinin Leningrad Polytechnic Institute, O. M. Todes began his scientific activity at LPI and at the Institute of Chemical Physics of the Academy of Sciences of the USSR under the guidance of such outstanding scholars as Ya. I. Frenkel' and N. N. Semenov. During this period (1930-1940) he formulated the nonstationary theory of thermal explosion (successfully evolved and applied at the present time).

Later (during 1946-1960) when the scientific interest of O. M. Todes was concentrated in the area of the physics of dispersion systems, ideas worked out in thermal explosion theory were developed in the theory of thermal stress instruments with solid phase dispersion: catalytic reactors and adsorbers. In 1945-1955 he carried out studies on the mechanism of heat exchange between the gaseous and solid phases in dispersion charging and on the mechanism (dynamic and kinetic) of mass transfer in sorption in stationary and moving dispersion layers. Mass transfer during crystallization served for a time as the subject of a wide range of works in 1941-1960; during these years O. M. Todes studied phenomena arising during condensation and coagulation of aerosols.

Since 1950 and to the present day one of the main directions of O. M. Todes' scientific activities was in the study of the hydrodynamics, structure, and heat exchange in a boiling layer. His proposed functions for calculation of the hydrodynamics of a boiling layer have found wide application. A series of works in this direction carried out by O. M. Todes have a directly practical nature, for example the development of methods of measuring the structure of a boiling layer and practical motion in it, the theory of granulation in a boiling layer, and the theory of chemical reaction processes in it. These works were awarded the gold medal of the VDNKh in 1963, and many of their results have taken root in the national economy.

In 40 years of scientific activity O. M. Todes had 250 articles published, among them three monographs. A number of his inventions were patented abroad. Seven doctoral and over 50 candidate's dissertations were defended in the last 25 years under the guidance of, and in consultation with, O. M. Todes.

Translated from *Inzhenerno-Fizicheskii Zhurnal*, Vol. 20, No. 2, pp. 361-362, February, 1971.

© 1973 Consultants Bureau, a division of Plenum Publishing Corporation, 227 West 17th Street, New York, N. Y. 10011. All rights reserved. This article cannot be reproduced for any purpose whatsoever without permission of the publisher. A copy of this article is available from the publisher for \$15.00.

O. M. Todes did a great deal of science teaching; in cooperation with G. A. Zisman he wrote an enduring three volume course in physics of four editions. Oskar Moiseevich is a member of a number of scientific societies of the Academy of Sciences of the USSR and member of the editorial board and editor of a number of publications.

O. M. Todes has arrived at his 60th year in the full flower of his creative power. We wish him good health and further creative successes.