

KSENIYA MIKHAILOVNA GORBUNOVA
(ON HER SEVENTIETH BIRTHDAY)

V. I. Spitsyn, A. N. Frumkin,
and Yu. M. Polukarov

UDC 541.13

Kseniya Mikhailovna Gorbunova — a great Soviet scientist, known for her work in the field of physical chemistry — was born on August 16, 1904, in Kislovodsk. After graduation from the chemical faculty of Leningrad Polytechnic Institute in 1927, she joined the staff of the Institute of Metals, where she worked as an engineer up to 1930. In 1930 she began graduate studies in the colloidal-electrochemical laboratory of the Academy of Sciences of the USSR, which was subsequently transformed into the Institute of Physical Chemistry of the Academy of Sciences of the USSR. All of Kseniya Mikhailovna's scientific work has been associated with this institute. In 1936 she defended a doctoral dissertation there, on the topic "Electrocrystallization of Metals." In 1939 K. M. Gorbunova was awarded the title of Professor.

The basic trend in K. M. Gorbunova's works pertains to the investigation of the complex processes that occur at metal/solution and metal/active gas medium interfaces, and the disclosure of the principles of the growth of crystals of the new phase, arising as a result of the interaction of metals with the medium. The investigation of processes of growth of electrolytic deposits of metals and especially the formation of single crystals during electrolysis permitted Kseniya Mikhailovna Gorbunova, in collaboration with P. D. Dankov, to disclose the mechanism of the elementary events of these processes and to create a crystal chemical theory of the electrocrystallization of metals. Her studies along this line made a significant contribution both to the field of the electrodeposition of metals and to the development of the problem of crystal growth.

K. M. Gorbunova was a pioneer in the study of processes of chemical reduction of metals in the USSR. Under her supervision, and with her direct participation, not only was the mechanism of these processes investigated and the optimal possible pathways determined, but new methods were also developed for the production of metals and alloys by chemical reduction. These methods have now found wide use in chemistry and have been incorporated into the All-Union State Standards of the USSR.

K. M. Gorbunova's studies in the field of the physical chemistry of the surface of semiconductors, which laid the scientific foundations for the technically important processes of gas treatment and selective etching of the surface of germanium and silicon and their oxides, are of great scientific interest and importance to the national economy.

The results of K. M. Gorbunova's scientific studies have been presented in more than 200 scientific works and two monographs. Kseniya Mikhailovna spends more time in work on the propagandization of the achievements of Soviet science, and the training and growth of scientific staffs. K. M. Gorbunova is a member of the International Committee on Electrochemistry, in the work of which she takes active part.

The government has highly valued the services of Professor K. M. Gorbunova in the field of chemistry, having awarded her the Order of the Red Banner of Labor and medals.

In 1966 she was awarded the title of Honored Scientist and Technologist of the RSFSR.

Kseniya Mikhailovna devotes all her time to science.

A feeling for innovation in science and an inexhaustible energy are the distinguishing features of Kseniya Mikhailovna.

Translated from *Élektrokhimiya*, Vol. 10, No. 8, pp. 1299-1300, August, 1974.

© 1975 Plenum Publishing Corporation, 227 West 17th Street, New York, N.Y. 10011. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, microfilming, recording or otherwise, without written permission of the publisher. A copy of this article is available from the publisher for \$15.00.

Soviet electrochemists and specialists in the field of the physical chemistry of semiconductors, the Editorial Board and Editors of the journal "Élektrokhimiya," and the group of the Institute of Physical Chemistry wish Kseniya Mikhailovna vigorous health and new creative successes in her benevolent service to Soviet science.