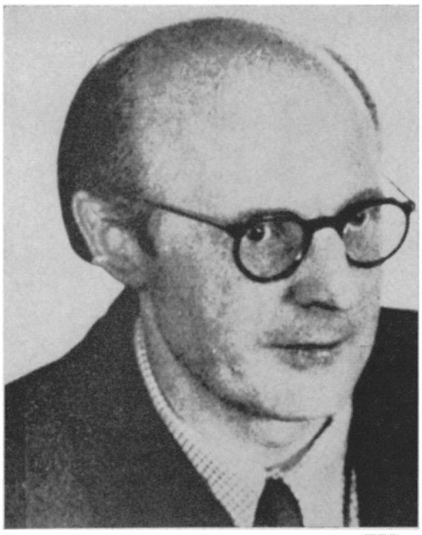

UPI

PROF. J. HANS D. JENSEN

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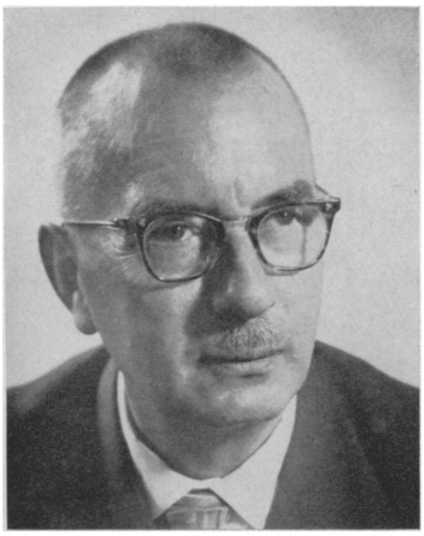
DR. MARIA GOEPPERT MAYER

Atoms for Peace

DR. EUGENE P. WIGNER

G. M. Basford Company

PROF. GIULIO NATTA



Tita Binz

PROF. KARL ZIEGLER

CHEMISTRY

Nobel Chemistry Prize

Two chemists, a West German and an Italian, were awarded the Nobel Prize in Chemistry for their work in a new field of chemistry—By Watson Davis

➤ THE NOBEL PRIZE in Chemistry for 1963 was given to two chemists, one an Italian and the other a West German, who have laid the groundwork for a virtually new field of chemistry. Production of better plastics, textiles and rubbers from by-products of oil refiners has resulted.

Dr. Karl Ziegler, the director of the Max Planck Institute for Coal Research at Mulheim-Ruhr, has been responsible for fundamental work on new catalysts for new petrochemicals. Dr. Giulio Natta, professor of industrial chemistry at the Polytechnic Institute of Milan and consultant to Montecatini Societa Generale per l'Industria Mineraria e Chimica, has been responsible for the production of new plastic polymers, including polypropylene, which are rapidly going into production and use not only in Italy but also in the United States. Drs. Ziegler and Natta shared the Nobel Prize in Chemistry.

The new chemical substances being produced take many forms of long-chained molecule substances called polymers.

Substances that are not used up in the chemical reactions between the oil chemicals, but do promote the reactions, are the keys to the new chemical possibilities. These are called catalysts of an organo-metallic sort, principally combinations of aluminum, carbon and hydrogen containing compounds, and titanium and chlorine.

Most advanced in industrial production are the copolymers which can be made into form such as solid plastics, plastic films, textile fibers and rubbers.

A large plant has been built at Neal, W. Va., near Huntington by the Novamount Corporation, a subsidiary of the Italian Montecatini organization.

While the production of industrial products is promising and important, the researches recognized by the Nobel award are fundamental in their nature, involving new catalysts that make possible an almost unbelievable variety of chemical reactions.

Polyethylene, polypropylene, polybutylene and polystyrene are the big molecule chemicals produced as a result of the fundamental work of the two Nobelists.

The new field of chemistry opened up by their basic researches has given rise to new words in scientific literature including "stereoregularity" and "isotactic." The word isotactic was coined by Dr. Natta's wife, Prof. Rosita Natta, who is a professor of literature, to indicate that the molecules have the same shape the whole length of the chemical change.

The production of plastics from the new chemical is most advanced and one possibility is the manufacture of a polystyrene which, because of its crystal character giving a high melting point, can be used at high temperatures whereas the ordinary sort melts in hot water.

The rubbers in development by a large number of rubber companies throughout the world are expected to give extraordinary mileages for automobile tires, some predictions running up to 120,000 miles.

Out of the Ziegler catalysts came a new method of making tetraethyl lead, the chemical added to gasoline to prevent auto engine knock. Dr. Natta's first announcement of his work on copolymers was made in 1954.