12-18-1984

UD Honors Research Physicist

Follow this and additional works at: https://ecommons.udayton.edu/news_rls

Recommended Citation
https://ecommons.udayton.edu/news_rls/4689
The University of Dayton

News Release

UD HONORS
RESEARCH PHYSICIST

DAYTON, Ohio, December 18, 1984 -- The past two decades have seen refinement of silicon chip production and manufacturing processes, but little fundamental research on the theories which led to the development of the silicon chips and ultimately to today's information age technology. A University of Dayton research physicist has provided some new insights in this area and is being honored for his achievements.

Frank Szmulowicz, Ph.D., is the winner of the University of Dayton's 1984 Wohlleben/Hochwalt Outstanding Professional Research Award. The $1,000 award will be presented on Friday, December 21, at a noon luncheon in the J.F. Kennedy Memorial Union. Szmulowicz, a research physicist in the Metals and Ceramics Division of the UD Research Institute, was cited for his accomplishments in the theory of electron transport in silicon.

The technology of electronic conduction in silicon is the basis for the modern revolution in communications and information. According to Szmulowicz's award nomination which was written by UDRI's John Detrio and Alden Ray, "An enormous, profitable industry and culture have evolved around the silicon chip; yet, in spite of the intense interest of many well-qualified and brilliant theorists, little new insight or advance, based on first principles, has been developed on this subject over the past 20 years."

"This is especially true," they write, "of the fundamental aspects of those processes which limit the electrical transport properties. Dr. Szmulowicz's recent work on the scattering of moving positive charge carriers..."
in p-type silicon and germaniums are the first significant advances in this field in perhaps 20 years."

The increased understanding provided by this work is expected to be used to improve the performance of electronic devices made from silicon.

"The importance attached to scientific and technological leadership in electronics," Detrio and Ray write, "is underscored by the massive efforts put forth by Japan to excel in the area of integrated circuit technology. The theoretical understanding provided by Dr. Szmulowicz's work enhances the prestige and position of electronic research in the U.S."

Szmulowicz resides in Vandalia, Ohio, with his wife, Judit, and their three children, Ursula, Larry, and Melissa.

Also nominated for the 1984 award was Ran Y. Kim, Ph.D., for his research on the "investigation of Free-Edge Delamination in Composite Laminates." Dr. Kim resides in Beavercreek, Ohio, with his wife, Jane, and their three children.

The Wohlleben/Hochwalt Award was endowed by Carroll Hochwalt, a 1920 UD graduate, and 1935 UD honorary Doctor of Science degree holder, who credited the late Brother William Wohlleben, S.M., with his success as a research chemist. With his former professor's help and encouragement, Hochwalt and his partner, Charles Thomas, founded their own company which in 1936 was merged into the Monsanto Chemical Company and became the central research laboratory of what is today the Monsanto Research Corporation.

Hochwalt, who throughout his career received over 80 patents, also served as Monsanto's vice president for research and development, as a member of Monsanto's Board of Directors, and as president of Chemstrand Corporation, a subsidiary of Monsanto.

For more information, contact Ro Nita Hawes-Saunders at (513) 229-3241.

-30-