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No bands were playing when, in 1946, Dr. Alexander Smakula and other famous German and Austrian scientists bade "auf Wiedersehen" to their families and to their homeland. Theirs was, of necessity, a silent departure for they were being spirited out of Europe by the U.S. Army. The mission was carried out successfully--under the very noses of the Russians, who had their own plans for the scientists.

Now, after 20 years, Dr. Smakula will return to Germany. And this time a band will be playing a welcome. In fact, on September 30th, in Cologne, a big celebration with music, will be held in his honor. His host, the German Society for Photography, will present him with a medal.

The tribute of the society is belated recognition for the major contribution he made to the photographic art 30 years ago. For Dr. Smakula, who retired from the faculty of the Massachusetts Institute of Technology this June, is the scientist who developed the **anti-**reflective coatings (the so-called blooming) now used on all camera lens. In fact, his invention is vital to virtually all optical devices in use today.

But at the time he developed the technique (which greatly increases brightness and contrast on optical systems), it was considered so important to the German government that the patent was classified as a military secret. It was not until several years later--when, in America, a pair of M.I.T. scientists independently produced similar coatings--that even the scientific community knew of Dr. Smakula's work.

Even then, the lens coating was being used on telescopic and periscopic lens, a usage that has since increased radically.

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Dr. Alexander Smakula--2

Dr. Smakula's research in the field of optical materials was carried out for the famed camera and optics firm, Carl Zeiss Co. in Jena, Germany. One of the best-known of the materials developed during his investigations was KRS-5 which is still used for infrared windows and prisms.

While working for Zeiss, Dr. Smakula also made important contributions to the development of new optical crystals and new lubricants capable of withstanding high and low temperatures.

However, he had first gained acclaim in the scientific community almost a decade earlier, while he was serving as a research associate at the University of Gottingen. There, he developed a method for computing the number of electrons trapped during the interaction of radiation with crystals. The method, still in use, is known as the Smakula equation.

The famed physicist was born Sept. 9, 1900, in Dobrowody, Ukrainia (then part of the Hapsburg Empire). He decided early on a scientific career, but World War I interrupted his education.

After the war, he entered Gottingen, at that time a great center for science. He was accepted at the university and in 1927 received his Ph.D. in physics after which he was asked by one of his professors (Prof. R. W. Pohl) to remain and work as a research associate.

Also at Gottingen during this period was a brilliant budding scientist named Arthur von Hippel, who would later help steer Dr. Smakula's career course in America. When Dr. Smakula was brought to this country by the U.S. Army and assigned to do research at Fort Belvoir, he ran into his old college associate, now a distinguished professor at M.I.T. Dr. von Hippel persuaded Dr. Smakula to come to work at the Institute and to return to his earliest scientific interest -- the formation and growth of single crystals.

Had he chosen to concentrate in another area, however, he probably would have

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Dr. Alexander Smakula --3

been equally welcome, for Dr. Smakula also had an international reputation as an investigator of organic compounds by spectroscopical methods.

In 1930, he went to the Kaiser Wilhelm Institute for Medical Research to sate his growing curiosity about vitamins. Some of his subsequent findings on the link between the structural and optical properties of such compounds proved vital to the discovery of Vitamins A, B2 and D and the development of quantum organic chemistry.

It was upon the completion of this work that Dr. Smakula joined Zeiss as head of the research department, a position he held until he came to this country. His wife, Erika, and their four children, whom he had been forced to leave behind when he came to America, joined him a year after he arrived. He worked for five years as a consultant at Belvoir.

In 1951, when Dr. Smakula came to M.I.T., he was named associate director of the Laboratory for Insulation Research under Dr. von Hippel. Subsequently, Dr. Smakula founded and headed the Crystal Physics Laboratory where he developed new techniques for growth, purification and study of crystals.

At present his particular interest is a study of the influence of defects on the physical properties of crystals. Another field he is now studying: Structural transformation of crystal lattices and formation of solid solutions (mixed crystals). His techniques for high precision determination of lattice constants and densities have received wide recognition and usage by scientists in solid state physics. In fact, his latest investigation of dielectric properties of crystals at low temperatures has led to a discovery of new and unexpected phenomena.

Varieties of crystals produced in Dr. Smakula's laboratory are given to other laboratories at M.I.T. and to other research centers in the United States and abroad. Foreign scientists are frequent visitors at the laboratory, where they come to discuss their problems or to learn the techniques developed there.

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Dr. Alexander Smakula--4

He will return to his post at the Crystal Physics Laboratory after his current European trip.

During his years at M.I.T., Dr. Smakula has written two books (one a summary of all that is now known about the growth of crystals) and published more than 40 technical papers. He was appointed to the faculty in 1959 and was promoted to full professor in 1962.

"He came to teaching late, but he has been a good teacher, played an active part in the development of materials research and participated fully in the general activities of the department," his former department head reported.

His enthusiasm has not been confined to the classroom. Three of his children are now -- or have been -- working in scientific research and the fourth, Ilse, is married to a mechanical engineer. Another daughter, Elli, received her Ph.D. (in chemistry) from Harvard and taught at the University of Pittsburgh before getting married and taking over the duties of housewife. A son, Peter, is a research associate in physics and another son, Fritz, is an aeronautical research engineer. Dr. Smakula and his wife now live in Auburndale, Mass.

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June 28, 1966