Izabela KOPTOŃ-RYNIEC

PROFESSOR JAN SZMIDT. SCHOLAR, RECTOR AND MAN OF COMMUNITY

PROFESOR JAN SZMIDT. UCZONY, REKTOR I CZŁOWIEK WSPÓLNOTY

Prof. dr hab. Jan Szmidt, Eng. (1952–2026) had been the co-creator of the history of Polish science and higher education for a half of century. He was a valuable specialist in the field of micro-electronics and nanotechnology, a long-time Rector of Warsaw University of Technology, President of KRASP (The Conference of Rectors of Academic Schools in Poland), organizer of academic life and promoter of science and industry cooperation. Simultaneously, he remained a man dedicated to the student community, socially engaged, committed to tradition and being convinced that the university should serve the society and the State.

He was born on December 3, 1952 in Biłgoraj, in medical family, as the fourth of five children. His father was a surgeon. He spent his childhood in the city, famous for the traditions of sieves' production, situated at the south-eastern Poland in the Lubelskie voivodeship. His family house combined the respect for knowledge, professional responsibility and social engagement. As a young man, he was distinguished by a wide interest in many domains. Although he was determined as a person with a humanist's nature, he was fascinated by mathematics, physics and technical sciences. Chemistry or biology were less attractive to him; logics, analysis and solution of the complicated problems were the subject of his interest. He liked to set up the ambitious goals and he strived at them consequently. He was interested in the history of Poland and the natural history and the nature itself. He evaluated especially the forest territories of the Baltic Sea coast where he relaxed from the scientific work. He liked also to make some things himself, treating it as a form of creative relaxation. In his childhood, he played football; later on, he became more engaged in basketball and volleyball. He came back also to sport passions as being already the Rector of Warsaw University of Technology: he participated actively in traditional volleyball matches, played between WUT and Military University of Technology (WAT). He was also involved in sailing races for the WUT Rector Cup at the Zegrzyński Lake (Zalew Zegrzyński) and participated in WUT employees' picnics and students' festivals, organized at the stadium of Warsaw Siren. He treated the mentioned events as an important element of building the academic community.

Prof. Jan Szmidt,
Rector of Warsaw University of Technology in the years 2012–2020
Photo: Press materials of WUT

Prof. Jan Szmidt at the WUT employees' picnic at the Zegrzyński Lake
Photo by I. Koptoń-Ryniec

Volleyball match between the WUT and WAT representations in 2014. No 1 – Prof. Jan Szmidt
Photo by I. Koptoń-Ryniec

Prof. Jan Szmidt during the conference at Warsaw University of Technology in 2014
Photo by I. Koptoń-Ryniec

Beginnings of academic career

After graduation of primary school and lyceum in Biłgoraj in 1971, he commenced the studies at the Faculty of Electronics at Warsaw University of Technology. It was the time of dynamic development of electronics and semi-conductor technology which had become quickly his scientific specialty. He obtained a diploma of MSc in electronics in 1976. At the same time, he began to work at the Institute of Electron Technology, functioning now as Institute of Microelectronics and Optoelectronics. In the years 2020–2024, he was the managing director of the institution. He was connected with the University for the whole period of his professional life. He passed systematically the successive stages of academic career:

- The trainee assistant (1976–1977);
- Assistant (1977–1978);
- Senior assistant (1978–1985);
- Assistant professor (1985–1999);
- Associate professor (1999–2005);
- Full Professor since 2005.

He obtained the degree of doctor in technical sciences (PhD) in 1985, with the distinction for the thesis concerning electrophysical properties of carbon layers from boron nitride, being produced by reactive-impulse-plasma method on the silicon substrate. Ten years later, he obtained habilitation on the grounds of monography, dedicated to diamond-like carbon layers, utilized in microelectronics. In 2005, he obtained the title of professor of technical sciences.

Scientific studies and development of microelectronics

The scientific achievements of Prof. Jan Szmidt cover electronic technologies, thin layers of materials and advanced semiconductor technologies. A special place is occupied by the studies on diamond and diamond-like layers (individual Scientific Award of the 4th Department of Technical Sciences of PAN (Polish Academy of Sciences, 1977); on oxides, nitrides and graphene. The work conducted by Prof. Jan Szmidt had not only the cognitive significance but also practical applications. They concerned, inter alia:

- Antireflection layers for surgical operations;
- Photovoltaic batteries;

- Solar batteries; semiconductor heterojunctions;
- Passivation and securing layers for semiconductor devices;
- Gate dielectrics in MIS structures;
- Heat-discharging layers in GTO thyristors;
- Protection of medical implants, having a contact with a human body.

In the years 1980–2000, he participated in the implementation of more than 30 research projects in the field of basic, applied and developmental studies. He carried on the mentioned studies together with the students and PhD candidates; owing to this, the environment of the young scientists, involved in modern material electronics, was created. During the recent two decades of the scientific activity, Prof. Jan Szmidt focused his attention on the new semiconductor materials – graphene, silicon carbide (SiC) and gallium nitride (GaN). The mentioned materials are applied in high-temperature electronics, high-frequency equipment and high-power systems. He was the author or co-author of 186 scientific publications, including 58 papers in the indexed periodicals, three authorial monographs and 28 book publications, developed by him as editor or co-authors of the particular chapters. His achievement includes also 15 patents and patent applications where he was the author or co-author.

Creator of scientific school and mentor of young researchers

He developed the opinion on 27 doctoral dissertations, seven habilitations and numerous professorial applications and scientific publications. In 2005, he set up the Laboratory for Technology of Electronic Microsystems and Materials. He utilized the experience of older scientific workers, creating simultaneously a space for development of the young generation of researchers and PhD students. Owing to such activity, the team with the features of original scientific school was created. He cooperated with many research centers in Poland and abroad, including, *inter alia*:

- Institute of Electronic Materials Technology;
- Institute of Electron Technology;
- Wrocław University of Science and Technology;
- Łódź University of Technology;
- Lublin University of Technology;
- Imperial College London;
- Carnegie Mellon University.

Prof. Jan Szmidt participated in the work of program and organization boards of more than 30 scientific national and international conferences, often as chairman or co-chairman. As when being the Rector and after termination of the cadency, he participated in the events, organized by the Parliament of the Students of Poland and the National Representation of PhD Students. He took also part in discussion panels, open meetings and debates concerning the future of higher education. In October 2025, he was awarded by the Parliament of the Students with the Award of "Friend of Self-governing Students' Organization" for the activity in favour of academic environment; then, he was honoured with the award in the Competition of the PhD environment – PRODOK 2025 in category: Friend of the National Representation of PhD Candidates, and the statuette "Friend of Doctoral Environment".

Prof. Jan Szmidt at the ceremony of promoting the doctoral and habilitation theses in Warsaw University of Technology in 2014
Photo by I. Koptoń-Ryniec

Academic teacher

Didactic activity of Professor covered all forms of work with the students – lectures, calculation exercises, laboratories, seminars and projects. The courses of physics of solid body, semiconductor electronics and nanotechnology had an especially important place. He was the initiator of modern didactic subjects, introduced to the program of the Faculty of Electronics and Information Technologies:

- "Advanced Technologies of Micro- and Optoelectronics",
- "Nanotechnologies",
- "Nanodevices and nanostructures".

In 2023, he developed and implemented a new subject: "Directions of Development of Microelectronics and Photonics". He invited the recognized experts from Poland and abroad to run the courses; he created a space for the exchange of experiences between the academic environment and industry. The important element of his activities included also foundation of Scientific Circle of Students of Microelectronics and Nanoelectronics. The students appreciated him for his openness, readiness to talk and authentic interest in their matters. He was considered as a friend of the academic youth. He participated willingly in discussions, did not avoid any difficult problems and tried always to support the students and PhD candidates.

The Dean and Rector of Warsaw University of Technology

In the years 2002–2005, he was the deputy Dean and in the period of 2008–2012 – the Dean of the Faculty of Information Technologies of Warsaw University of Technology. During the mentioned period, he carried out a wide modernization of the Faculty infrastructure – from the power network and water-and-sewage system to reconstruction of a part of the building and creation of the Central Auditorium for more than 140 persons. He also initiated the commencement of development of two wings of the Faculty building.

In the years 2012–2020, he was the Rector of Warsaw University of Technology. During his term, the University strengthened considerably its scientific and organizational position. One of its most important undertakings included creation of CEZAMAT campus at Poleczki street in Warsaw: it was a modern center of advanced materials and technologies, co-founded by the consortium of some scientific institutions. The consortium consisted of the following units: Warsaw University, Institute of High Pressures of PAN (Polish Academy of Sciences), Institute of Electron Technologies and Institute of Electronic Materials Technology. Prof. Jan Szmidt played a key role in preparation of the project as well as in the implementation of the investment which was financed by almost 100 million € from the structural funds.

Activity in favour of Polish higher education

The active participation in the Conference of the Rectors of Academic Polish Schools (KRASP) was especially important fragment of his activity. In the period of 2012–2016, he was the Chairman of the Commission of Education of KRASP and the member of the Praesidium of the organization. Then, in the years 2016–2020, he played a function of the President of KRASP. It was the

Prof. Jan Szmidt – signing the erection act of CEZAMAT in 2014
Photo by I. Koptoń-Ryniec

Prof. Jan Szmidt (third from the left in the first row) with the participants of the plenary session of KRASP in Warsaw University of Technology in September 2016
Photo by I. Koptoń-Ryniec

period of intensive work on the reform of sciences and higher education. Professor participated actively in the development of the assumptions of the new act: Law on the higher education and science. He took a part in the Congress of Polish Sciences in Cracow in 2017 as the member of Program Council and the author of the publication: "Discussion before the Congress of Polish science – considerations". After the termination of the cadency of the President of KRASP in 2020, he became its Honorary Member (until 2024) and then, the member of the Convent of Honorary Experts of KRASP. In the years 2022–2025, he acted also in the Presidium of the Main Council of Science and Higher Education and in the period of 2023–2026 – in the Commission for Ethics Problems in Science of PAN.

Science for industry and safety of the State

Prof. Jan Szmidt belonged to the most important advocates of cooperation of science and industry and defense sector. He cooperated with the following institutions:

- Polish Armaments Group,
- Mesko,
- PCO,
- PIT-RADWAR,
- Thales Group.

He contributed to the development of the Centre for Defense and Safety of Warsaw University of Technology, he supported the projects of rocket and satellite technologies and initiated the cooperation with the armaments industry. He was the co-author of Feasibility Study of Polish Short-Range Rocket Assembly, prepared together with the Military Academy of Technology (WAT). It was his initiative to create the PhD Studium of Rocket Technologies and Forum of Defense and Safety. During the recent years, he was the manager of the innovative project of construction of Polish quantum computer for the military and civil needs within the frames of the project Saphire 1 (Szafir 1). He supported also the technological development of Eastern Poland under the project of Technological Park East Poland (Polska-Wschód) in Suwałki. When the mentioned Park adopted the legal name of the company Ltd., Prof. J. Szmidt represented – for a long time – Warsaw University of Technology when playing simultaneously the function of the Chairman of Supervising Council.

International cooperation

The cooperation with the abroad constituted a considerable part of the Prof. Szmidt's activity. He was the co-initiator of the partnership of Warsaw University of Technology and, *inter alia*, universities from the South Corea. The cooperation with the Kyungpook National University in Daegu had a special meaning. Within the frames of the mentioned cooperation, the joint conferences, research & development workshops, exchange of the students and scientific staff and the programs of dual degree programs, were

Meeting with Kyungpook National University at Warsaw University of Technology in 2014
Photo by I. Koptoń-Ryniec

implemented. Prof. J. Szmidt received the "Panel of Recognition" from the Ministry of Foreign Affairs of the Republic of Korea for the contribution to development of Polish-Korean relations in 2024. He was also engaged in the promotion of Polish Science abroad after the system transformations of 1989. He participated in the international technological fairs in Pittsburg, London, Osaka and Budapest, supporting the relationships of Polish universities with the foreign partners. In 2017, he was honoured with the title of doctor honoris causa of the Kiev University of Technology.

Social activist and commemorator of Polish science

Social activism was important although less known area of his activities. During the nascence of the University "Solidarity" and later on, after its illegalization, he was engaged in the activities aimed at the improvement of the living conditions of the employees of the University. Together with the group of the workers of WUT, he co-founded the Housing Cooperative "Ideal Housing". He played a function of the president of the board of the mentioned organization for 21 years. The cooperative implemented 10 housing investments – buildings and settlements intended mainly for the employees of the University. The discussed activity required enormous organizational engagement; however, Professor was able to combine it with his scientific, didactic and administrative work.

As being the Rector, he paid a great attention to the history of Polish science and generating the institutional memory, participating, *inter alia*, in the activity aimed at establishing the year 2013 as the Year of Jan Czochralski. He initiated organization of the exhibitions, seminars and events, popularizing the figure of the outstanding scholar – creator of the method of silicon monocrystallization. The undertaken activities included, *inter alia*, the exhibition in the Seym of the Republic of Poland (Polish Parliament) and unveiling of the sculpted bust of Prof. Jan Czochralski in the Main Building of WUT.

Prof. Jan Szmidt with the statuette "Diamond Engineer" of Technical Review in 2019
Photo by I. Koptoń-Ryniec

Awards and distinctions

For his scientific, didactic and organizational activity, he obtained numerous state and environmental distinctions. They included:

- Officer's Cross of the Polonia Restituta (2020);
- Golden (1999), Silver (1987) and Bronze (1977) Cross of Merits;
- Medal of the Commission of the National Education (2007);
- Distinction "Merited Activist of Cooperative Movement";
- Golden Honorary Distinction of SIMP (2017);
- Title of "Diamond Engineer of 2019" of Technical Review;
- The Mikołaj Kopernik Medal from the Board of the Union of Polish Banks (2020);
- Golden Medal of Warsaw Days of Engineering (2020);
- Numerous awards of the minister and rector of Warsaw University of Technology.

In February 2026 he became posthumously honoured with the Golden Medal "Merited for Polish Science Sapientia et Veritas".

The recent years and the last farewell

After the termination of the Rector's cadency, he became still active in respect of science and organization. In the years 2020–2024, he was the head of the Institute of Micro- and Optoelectronics, continuing the research work and development of the young scientific staff. He died on 3 February 2026. He was buried at the Military Cemetery in Warsaw Powązki. He left an outstanding scientific achievement, thousands of graduates, numerous institutional initiatives and permanent trace in the history of Polish higher education. He will remain for many, first of all, a friendly man, open to dialogue, faithful to values of academic community and being convinced that science should serve the people and development of the state.

Cadre from the funeral of Prof. Jan Szmidt on February, 17, 2026
Photo by I. Koptoń-Ryniec

Developed by Izabela Koptoń-Ryniec on the grounds of the authorized biographic materials, offered by Prof. Jan Szmidt (December 2025) to the Warsaw University of Technology Museum