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THE PROFILE OF PROFESSOR JAN STANKOWSKI - FAMILY AND SCIENTIFIC REMEMBRANCES

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In this paper we illustrate various aspects of activity of our father Jan Stankowski, who died in Poznań on September 4, 2009. He was a pioneer and later Nestor of the Electron Paramagnetic Spectroscopy in Poland, scientist of great accomplishments widely recognized in the world in many fields as magnetic resonances, proton glasses, high temperature superconductors and fullerenes. Jan Stankowski, surrounded by loving: wife, children, grandchildren and great-grandchildren, was also a humanist. He was a very happy person with a positive outlook on life.

INTRODUCTION

"Physics makes my life happy, because I can do what I love". These words were written by our father, Jan Stankowski in his memoirs, which he had been writing for several years. Besides being an excellent physicist and teacher, he was also a humanist, who realized that only written thoughts could last. He was a very happy person with a positive outlook on life. When he became ill, he didn't despair, downright opposite; he was saying that he is a fulfilled man and thanked God for everything.

Fig.1. Professor Jan Stankowski.

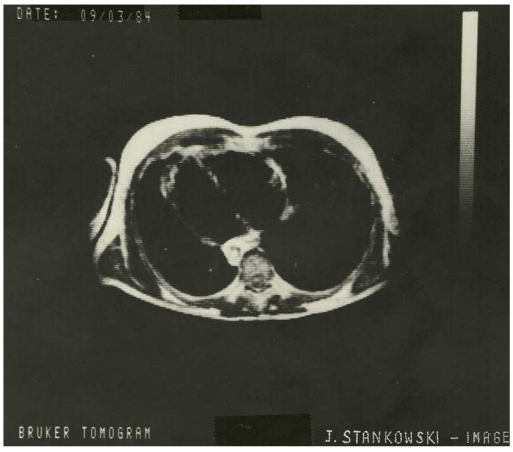

Fig.2. NMR tomogram image of Professor Jan Stankowski generous heart.

Jan Stankowski was born in January 1, 1934 in Poznań, died on September 4, 2009, at the age of seventy five. He was a pioneer and later Nestor of the Electron Paramagnetic Spectroscopy in Poland, scientist of great accomplishments widely recognized in the world. He was elected the Corresponding Member of the Polish Academy of Sciences in 1979 and the Full Member in 1988. He was also the Member of the Slovenian Academy of Sciences and Arts. Professor Jan Stankowski was the Vice President of the Groupement AMPERE (1996-2002), chairman of Section V of the Central Commission for the Degrees and the Scientific Title from 1990, chairman of the Physics Committee

Polish Academy of Sciences (1990-1999), President of the Poznań Division of the Polish Academy of Sciences (1990-1995), President of the Scientific Council of the Institute of Molecular Physics, Polish Academy of Sciences (1993-1998; and from 2003), and member of the many Scientific Councils. In 2000 he was elected a fellow of the Institute of Physics, London.

Professor Jan Stankowski was a member of the editorial boards of journals as Physica B (Holland), Ferroelectrics (USA), Applied Magnetic Resonance (Russia-Germany), Superconductivity Review (USA), Bulletin of Magnetic Resonance (USA), Acta Physica Polonica (Poland), Physics of Dielectrics and Radiospectroscopy (in Polish) – Poland, and Molecular Physics Reports (Poland).

During his career, Professor Stankowski published over 350 research papers in collaboration with 759 numerous different co-authors and promoted 28 PhD students.

Professor Jan Stankowski was awarded many honours and prizes, among them the Gold Cross of Merit, the Polonia Restituta Order, and the statuette “Gold Hipolit” from the “Society of the Hipolit Cegielski”.

FAMILY REMEMBRANCE

Our father Jan Stankowski had a wonderful wife Jadwiga, with whom they made a distinctive home. He was surrounded by the loving children, grandchildren and great-grandchildren. However, it was physics that permeated his life.

The adventure with physics began when he took part in a final round of Polish Physics Olympiad years ago. He was lucky enough to be a student of Professor Arkadiusz Piekara at Adam Mickiewicz University in Poznań. Professor Piekara was his inspiration till the end of his life.

Fig. 3. Jan Stankowski with his wonderful wife Jadwiga celebrates golden wedding anniversary, Poznań, August 2006.

Fig. 4. Jan Stankowski with wife Jadwiga and children: Małgorzata, Agnieszka and Tomasz, Poznań, August 2006.

Fig. 5. Jan Stankowski with his large family.

SCIENTIFIC REMEMBRANCE

Professor Jan Stankowski was always fascinated by the great challenges, which realization he used to embark on, although they might have seemed impossible. Just creating in 1975 the standalone Institute of Molecular Physics of the Polish Academy of Sciences in Poznań, where he was the first managing director, shows how important it is to have dreams and realize them consequently. On the night 1st / 2nd of January 1964, together with other members of his team, he put in operation the first ammonia maser in Poland.

Before creating the Institute, in the independent Radiospectroscopy Laboratory in Poznan, after the great efforts in 1967 they finally had set up an Electron Paramagnetic Resonance (EPR) spectrometer from JEOL. The spectrometer was working day and night. That was the beginning of intensive academic research in the radiospectroscopy area, including high pressure measurements. To meet the demands for more EPR spectrometers, Professor Stankowski together with his team elaborated and constructed an own EPR spectrometer. Its serial production was carried out by "*Radiopan*", a spin-off company created by the Institute of Molecular Physics Polish Academy of Sciences.

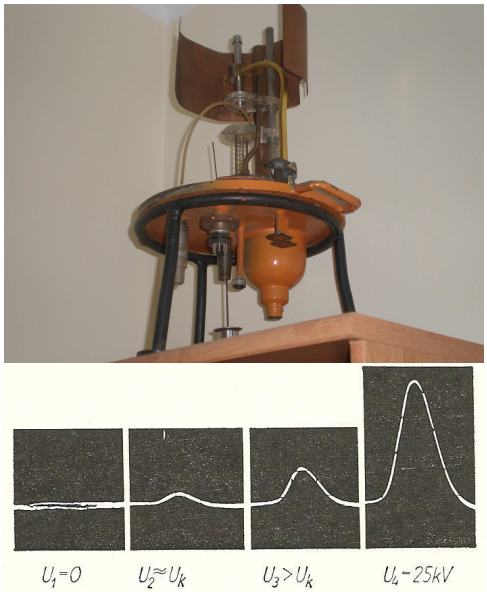

Fig.6. The part of the first ammonia maser in Poland and emission signal of maser for different voltage on separate-focus set.

Fig.7. Electron Paramagnetic Resonance (EPR) spectrometer from JEOL 1967 (top), and from "Radiopan" 1982 (bottom).

Another organizational and scientific challenge was the establishment, within, the Institute of Molecular Physics Polish Academy of Sciences, of the Division of Low Temperatures Physics in Odolanów in 1977. Professor Stankowski's idea was to use the liquid helium produced in Odolanów for the low temperature research.

The low temperature research, initiated by Professor Stankowski, has been conducted for over 30 years reaching temperature down to 0.3K. These studies comprise, e.g., phase transitions in solids, superconductivity in various materials, attributes of electric transport of carbon materials. The research is being conducted using different equipment, namely, the EPR spectrometer, working in the range of temperatures from 300K to 4.2K, equipment with the helium 3 cryostat for measuring dielectric permittivity, magnetic susceptibility and transport phenomena, i.e. electric and thermal conduction, in the temperature range from 300K to 0.3K, and the scanning tunnel microscope (STM) operating in the range 300K to 2K.

During his stay in the USA in 1987, Professor Stankowski had investigated the microwave absorption in the high temperature superconductors $YBa_2Cu_3O_{7-\delta}$ by the use of EPR spectrometer. He then discovered a novel method for studies of superconductors, so-called Magnetic Modulation Microwave Absorption

(MMMA). This method is still being used in research of granular superconductors with Josephson junctions (Stankowski *et al.*, 1987). He introduced the concept of the local temperature of Josephson junctions systems, which has enabled thermodynamic description of the effect of the microwave field on the high temperature superconductors.

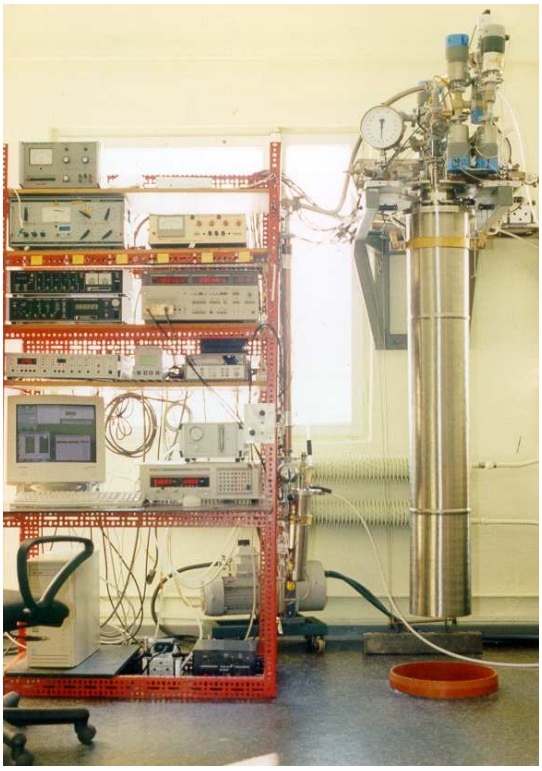

Fig.8. Equipment with helium 3 cryostat to transport properties, electric permittivity and magnetic susceptibility measurements in the temperature range 300 K to 0.3 K. Division of Low Temperature Physics in Odolanów.

Another brain-child of Professor Stankowski was the organization of annual academic workshops *"Lato z Helem – Summer with Helium"* by the Division of Low Temperature Physics in Odolanów. For the last 26 years these workshops gave high school students a unique chance to participate in experiments and lectures covering such topics as, e.g. the low temperature studies, cryogenics, and superconductor research, delivered by eminent Polish physicists. Professor Stankowski was an academic guardian of the workshops, for whom the educational aspects and contact with young people were very important. Professor Stankowski's outreach activities were highly recognized by the Polish Physical Society, who awarded him in 2009 the Professor Ernest Medal given for achievements in popularization of science and educational activities.

Fig.9. The annual academic workshops *"Lato z Helem – Summer with Helium"*, a brain-child of Professor Stankowski.

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Fig. 10. The Professor Ernest Medal awarded to Professor Jan Stankowski in 2009 for achievements in popularization of science and educational activities.

CONCLUSIONS

All what has been said above won't tell everything of what a special man our father was; he taught all of us honesty and respect towards other people. His love towards physics was so strong and contagious that two of his children have chosen to study physics, whereas a great number of his students has become eminent scientists.

During the celebration of his 70th birthday, our Father had said the words that could serve as a hint for all of us on how to live: *"I would like to see something what would surprise me. Because, all the publications, quotations and so called career does not bring you happiness, if you are not sure that you didn't waste the time given to you"*.

ACKNOWLEDGMENTS

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REFERENCE

Stankowski J., Kahol P. K., Dalal N. S. & Moodera J. S. (1987). Possible Josephson oscillation spectra and electron paramagnetic resonance of Cu^{2+} in Y-Ba-Cu-O. *Phys. Rev. B* **36**, 7126 – 7128.