

This issue is dedicated to our friend Professor Jozef Giergiel on the occasion of his 81–th Birthday

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Józef Giergiel: a scientist profile

Professor Józef Giergiel is 81 years old. Since over five decades he has been a scientist. In his rich life he has been dealing with several disciplines, he has written over 350 papers, and promoted a number of professors and doctors, and many, many students.

He is an excellent teacher, and the authority, who has become a legend yet during his life. His students are the elite of Polish science.

And these are not all of his lifetime achievements.

Józef Giergiel was born on 3 January 1931 in Cracow. He attended the Junior High School and graduated in Wieliczka, and later the electrical engineering school. *All the graduates of engineering schools were to follow their job orders. I also got such an order, namely, I was told to move far away, to the other side of Poland, to Szczecin. I was not very pleased with this, so I joined the Higher Technical Educational Course in Katowice, not far from Cracow. Having finished it, I was allowed to teach in secondary schools, and that saved me from going away to Szczecin* – Professor smiles. Directly after the course, he was studying at the Electromechanical Faculty of the AGH University of Science and Technology in Cracow. He graduated in 1957 with a degree in steel mechanical engineering. He took his first job at the design office of the Transport Machines in Cracow, and then at the Zinc Factory in the nearby Trzebinia. – *After two years there I learnt that there had been the vacancy in the Department of Mechanics at the AGH. So I applied to its director, Professor Mieczysław Damasiewicz. He asked me why I intended to change my job, since at the Academy I was to earn a third less. I replied: – Sir, but I am getting stupid in the industry... – You have got it – replied the professor.* Thus, an academic career of Józef Giergiel began. It has been lasting continuously already for fifty–two years.

Thursdays are Seminars

At first he dealt with the dynamics of the machines. This was the subject of his Ph.D. thesis and also the habilitation. At all times he used to cooperate with many industrial plants (mainly steel factories), where he served as a scientific consultant. – *There was a strong tendency of increasing the production efficiency. This was associated with the need of increasing the load to all of the devices used – rollers, compactors, cranes. It was our job. We have raised the efficiency of these mills and cranes* – says the professor. This activity was linked to the introduction of the

so-called "trouble-free operation" that is today the diagnosis and identification. It was in Cracow, at the AGH where the Polish school of diagnosis has been born.

The next step in the scientific activities of Professor Giergiel was robotics. – *It has become my favorite. I have co-created the course in the studying process named automation and robotics. It was me as the Dean of the AGH who introduced this discipline. The first graduates of the control and robotics in Poland just came out of our academy – he says. From the robotics it was only a step to mechatronics. In the past, when a project such as an elevator in a mine was considered the mechanics designer first chose its clutch. Then the electrical engineer fitted the electric engine. Finally, there came the automatic engineer and developed all the automatic control system. However, in the mechatronics design, all these elements are designed at once and in parallel, so that the working time is shortened incredibly – describes the professor.*

Nanotechnology is the latest scientific fascination of Jozef Giergiel. His wife helped him here a lot, as a specialist in the biology and organic chemistry, who brought him closer to the mysteries of these necessary disciplines in nanotechnology. – *This is a fascinating thing, the future of science. Right now we have nanotechnology in food, mechanics, computer science, medicine, cosmetics, bionanorobotics – continues professor.*

I noticed, that I failed many times in my scientific way, I learned to be humble towards Nature, and felt how its secrets stimulate curiosity! Indeed, Albert Einstein wrote the most beautiful thing we can experience is the enchantment with a mystery. It is a feeling, which stands at the cradle of true science.

I have continued my adventure with science for many years and have always felt, and to some extent still feel some kind of spiritual joy of creation, Gaudium Veritatis, as our Pope called – the joy of learning the truth. The mechanics at the nano-scale and the nano-robotics associated with it have become my fascination with scientific research over recent years. All the phenomena that fascinate us for a long time, take place not only at the spatial nano-scale, but also in the time nano-scale, and actually even smaller. Nanoscience, which I have devoted myself to, is in fact interdisciplinary. I admire prof. Hugo Steinhaus, who himself also worked on the common ground of different disciplines. He said about the interdisciplinary nature that it is like poaching: the most poachers are always on the edge of the forest... After many years I could say that it does not matter whether we are interested in the nano-technology, and therefore the use of nano-particles or macro-technology, the use of macro-objects in the macro-scale, time... Both require us to know and understand the matter. Despite the fascinating adventure I have experienced while practicing science and to some extent I am still experiencing, I could not reach (yet?) all that, I have intended. Maybe, due to this fact, I already understand from the lifetime perspective that:

- *investigating is usually more beautiful than the discovery,*
- *posing questions is more beautiful than giving answers to them.*

I was learning the art of losing while practicing science, not reaching the aim. It is probably just as Confucius said: "It does not matter that the man falls. It is

important to know how to get up". My falls I see as my partial defeats in the scientific investigations – he says.

He states that practicing science is inextricably connected with being modest and humble.

Today, at age of 81, Józef Giergiel still continues his scientific work. He is employed at the Department of Applied Mechanics and Robotics of the Rzeszow University of Technology. At the AGH he is the member of the Council of Seniors, and also participates in weekly seminars (always on Thursdays) in his Division.

There is well known the professor's saying, *"I mean, everyone has to perform his duties properly. Those who do not do the best they can – that is, how much they can do physically, academically and spiritually – destroy themselves"* – he used to say.

My Master was Professor Władysław Bogusz. I did my PhD under his supervision, become his assistant professor and then the professor, but he did not live long enough to take part in my professor's promotion and died six months earlier. He used to organize a seminar every week on Thursdays at 11 a.m. I took the custom over him, and now my graduate Professor Tadeusz Uhl continues it – said Professor Giergiel.

Seven kilos pike and six kilos catfish

Contrary to the appearances, life of Professor Giergiel was not only limited to his scientific work. He has got numerous out of his job passions that filled his free time, and gave relaxation. He can still give interesting tales about them. One of them is philosophy, and especially the history of philosophy. He has read about it, interested in it, has gathered on this quite an extensive library. Philosophical topics were included in his masterful lecture delivered at the recent ceremony while obtaining the title of the Honorary Professor awarded by his native university.

Another passion is the Space. – *Imagine that the students of aviation and space have nothing in their courses on the nature of the Cosmos* – notes the Professor. Therefore, in his lectures at the Technical University of Rzeszow, the Professor presents such a structure of the universe and its history. The lectures devoted to the history of exploration of the solar system he gave at various conferences and symposiums in Rzeszów, Szczecin, Łódź, Wisła and Warsaw.

Cats were at all times the Professor's life companions. These animals were always present in his house. He has heavily experienced the last year's death of his pet – the cat Marcelek. Then, his best friend was sixteen year old dog – Bartek, found somewhere, who joined the family on holidays and stayed permanently. Now, Markus, another friendly cat stays with Professor.

In his young years the primary passion of Professor Giergiel was fishing. – *But I went to fish rather than to eat them. All my trips were to relax, looking for some desolate places. Being there I unfolded my rods and rested. Most of the caught fish I let go, but some I would take home for my cat* – Professor laughs. His fishing records include seven kilos pike and six kilos catfish.

Today, he gets relaxed at his country house. He is there, trimming trees and shrubs. In his greenhouse he grows tomatoes, cucumbers and peppers. Irises are the Professor's favorite flowers.



Three hundred kilometers in a glider

The portrait of Professor Giergiel would not be complete without mentioning his sporting activities. He started boxing, but the first discipline, he regularly trained was classic wrestling. He achieved some successes at the level of the province. At the end of his secondary school and early high school, he started practicing table tennis and football, even participating in the league competitions. He played football for seventeen years, first for Cracovia, then Wisla, both in Cracow, then Sport Club of Biezanowice, and finally Hutnik in Trzebinia. At the same time he flew gliders and even finished with the gliding instructor diploma. He began from gliding course in Mragowo in the late 1940's. Later on, he took further training and qualifications courses up to the instructor's level. Glider airport was at that time in Cracow-Balice airport. – *We were flying in every spare moment, and obligatory on Saturdays*, he recalls. He also participated in a competition, during which he flew three hundred kilometers. *I continued this till my Ph.D. Then science has become the primary goal and started to replace sport ...* – sighs the Professor. – *Sport was creating my character, taught to accept defeat and be humble. Modesty is essentially needed for practicing science. Pope John Paul II once said: - Modesty is the hallmark of every scholar* – reminded Professor Giergiel.

Based on gatherings by Paweł Stachnik, 2011.

