Vol. 1, No 3, 2007 History

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IN THE 140th ANNIVERSARY OF THE BIRTH OF IGNACY MOSCICKI. IGNACY MOSCICKI, ENGINEER-INVENTOR, HOLDER OF HONORARY DOCTORATES, PRESIDENT OF POLAND

On December 1, 2007 140 years has passed since the birthday of Professor Ignacy Moscicki, the holder of honorary doctorates, the President of the Republic of Poland, a chemical engineer and an inventor. The 140th anniversary of the Prof Ignacy Moscicki's birthday, celebrated in the current year, obliges to present his biography. Ignacy Moscicki was born on December 1, 1867 in Mierzanyw near Ciechanyw, in a family with a pro-independence tradition. He was the son of Faustyn and Stefania, nйe Bojanowska. His grandfather Walenty was a participant of the November 1830 Uprising, and his father and two uncles Jan and Kazimierz took part in the January 1863 Uprising. Early in life Ignacy attended secondary school in Płock. He received the Polish school-leaving certificate in the Private Real School of Eugeniusz Babinski Memory in Warsaw. In 1887 he was admitted to the chemistry department of the Riga Polytechnicum (Technical University in Riga).

During his student years in Riga, Prof. Mościcki was engaged in the student's association "Welecja", for students who considered themselves the Poles. He entered the Zwiazek Młodziezy Polskiej (Association of the Polish Youth, abbreviated "Zet"), a clandestine patriotic organization of Polish students at universities of three partitioning powers. Then he joined up with activists of the "Proletariat II" and established a section of the socialist party in Riga.

After graduating from the University and writing a graduation work under the direction of Prof. Dr. Karol Bischoff, I. Moscicki participated in preparation of a bomb attack on the life of the governor general Iosif Vladimirovich Hurka, the Commander-in-Chief of the tsarist army in the Kingdom of Poland. In 1892 Ignacy Moscicki got married to Michalina Czyzewska and then, threatened with arrest, left Warsaw with his wife and went through Berlin and Rotterdam to London. He did not find here a job as a chemist. In 1894, he met Jozef Pilsudski, who – after a five-year exile in Siberia – arrived in secret in London. After five-year living in poverty, thirty-year-old Moscicki left London and moved to Switzerland, where he was employed at a Prof. Josef Wierusz-Kowalski's newly established Physics department at the Catholic University of Freiburg. At that time, this university had the largest Polish students' population. In Freiburg Moscicki began to study at the Physics-Mathematics department, learning the subject sixteen hours a day. He finished an annual physics class in two months, which brought forward a decision of Prof. Jozef Wierusz-Kowalski to offer him an assistantship. At this position he set up and demonstrated experiments during lectures in physics, displaying a great skill. Prof J. Wierusz-Kowalski entrusted him with running experiments in physics for senior year's students and to oversee doctoral studies in an experimental part.

Ignacy Moscicki
1.XII.1867 – 2.X.1946

Running out of Chile saltpeter deposits, growing demand of agriculture for nitrogen fertilizers and industry for nitric acid induced Ignacy Moscicki to start research on synthetic preparation of nitric acid from atmospheric nitrogen and oxygen with the use of an electric arc. After the four-year assistantship he resigned from his job at the University to take up a management of the Societe de l'Acide Nitrique in Freiburg which manufactured nitric acid according to his invention.

In order to increase the rate of yield of nitrogen oxides preparation in electric arc he designed high-voltage capacitors and started their production in Freiburg in 1904. The capacitors produced over twenty years according to his inventions were known by name of Moscicki's capacitors. In 1905 he finished the work on a very efficient method of nitric acid production on an industrial scale by combustion of air in an electric arc rotated by the field generated by an ectromagnet.

At the end of 1907 the Swiss company Aluminium Industrie AG Neuhausen signed a contract with Moscicki

for the purchase of his patent rights on the Switzerland and Austria territories and an obligation for undertaking construction of a 2000 kW nitric acid factory at Chippis. Moscicki personally supervised the erection of the factory, design a construction scheme, order equipment and machinery, its assembly, and technical start-up of the factory. In 1910, a cistern with the first ever made in the world concentrated nitric acid produced with the Moscicki's method left the factory. In 1912 Moscicki used his rotating-flame furnace for production of hydrogen cyanide from nitrogen and hydrocarbons. He tested a technology for producing of hydrogen cyanide in a 50 kW half-scale pilot plant built at Neuhausen.

In the spring of 1912 Ignacy Moscicki received a letter from the Ministry of Education in Vienna informing that a special Physical Chemistry Department would be opened at Lviv Polytechnic. In the letter the Ministry asked also whether Moscicki would agree to manage the Department as an associate professor. The physical chemistry was then the field of study lectured on only at the Lipsk University. The official document appointing Moscicki as the associate professor of Lviv Polytechnic was issued by the education authorities in Vienna in August 1912. After taking an official oath in front of a Galicia Governor, I. Moscicki was given some leave till the end of December for finishing all the matters in Switzerland. During this period he, together with other Poles, established a society for utilization of patents useful for Poland. The patent rights were given to the Society free of charge. Benefits from the utilization were to be allocated for development of science and technology on the Poland territory. On leaving the Switzerland I. Moscicki was the author of 47 inventions protected by patents in Austria, Denmark, Finland, France, Germany, the United States, Switzerland, and Great Britain.

Prof. I. Moscicki at his expense brought to Lviv about a dozen tons of equipment and machinery, organized labs of the Polytechnic Institute of Electrochemistry and the Chair of Physical Chemistry and Technical Electrochemistry.

At the same time he developed a project of a factory of nitric acid at Miluza and ferrocyanides at Bory near Jaworzno. At the Technical Chemistry Department I. Moscicki gave lectures in physical chemistry and chemical technology. He also delivered lectures on technical electrochemistry for four-year students. The series of lectures were entitled "Electrochemical methods of a great chemical industry". Apart from managing of the department and giving lectures I. Moscicki held a dean office of the Technical Chemistry Department for two terms of 1915/1916 and 1916/1917. For the next two terms of 1917/1918 and 1918/1919 he performed a deputy dean function.

In 1916 he founded a limited liability company "Metan". Prof. I. Mościcki and Dr. Kazimierz Kling, professor at the Jan Kazimierz University, and then at the Warsaw University were the managers of the company "Metan". Promoting technological progress in a gas-petroleum industry was the objective of the "Metan".

In 1917, on the initiative of I. Moscicki, the company began to publish a monthly journal called "Metan". The journal subtitle was: a monthly journal for natural gas industry issues published by the "Metan" Ltd in Lviv. Prof Kazimierz Kling was announced as the editor of the journal. In the years 1919–1922 Prof. Kling developed many inventions in the field of "petroleum bitumen" processing. The standing out from among these were patents for separating natural petroleum emulsions, atmospheric distillation of crude oil, preparation of natural gasoline from petroleum gas through the process of absorption, chlorination of methane.

After Poland regained independence, Prof. I. Moscicki made considerable contribution to organization of the Polish chemical industry. In 1922 I. Moscicki was nominated the Managing Director of the State Factory of Nitrogen Compounds (PFZA) in Chorzyw. During his stay in Chorzyw in the years 1922–1925, Mosciski not only started a production of carbide and nitrogenous fertilizer in the former Bayerische Stickstoffwerke, which had been closed down by Germans, but also put into operation the plant of saponification of nitrogenous fertilizer to gaseous ammonia and ammonia water, the plant of nitric acid, and the plant of soda nitre and ammonium nitrate. The production of nitrogen compounds in the PFZA made Poland entirely free from import. On June 20, 1924 a faculty council of the Electric Department of the Warsaw Polytechnic awarded I. Moscicki an honorary doctorate. The ceremony of awarding the diploma of the Doctor Honoris Causa took place on January 11, 1925.

In June 1925 Prof. I. Moscicki was elected the Rector of Lviv Polytechnic. He did not even manage to assume virtually the function of the Rector, when in January 1925 the Chemistry Department of Warsaw Polytechnic offered him to hold the chair of technical electrochemistry. From October1, 1925 Prof. I. Moscicki shared his time between classes in two Polytechnics and management of the PFZA in Chorzyw.

On June 1, 1926 Prof. Moscicki was elected the President of Poland by the National Assembly. On taking up the position of the President of the Poland Republic, he declared that he was going to give up the current positions: Professor at Warsaw Polytechnic, deputy Professor at Lviv Polytechnic, and the Managing Director of the State Factory of Nitrogen Compounds in Chorzyw. In 1933 Prof I. Moscicki was elected by the National Assembly for the second term. In the years 1927–1930, on the initiative of I. Moscicki, the modern Nitrate Factory

was built near Tarnow, in the suburbs of villages Swierczkow, Zbylitowska Gora, and Dabrowka Infulacka.

After the outbreak of the World War II he left Poland. Interned in Romania he renounced the office of President of Poland and moved to Switzerland, where he worked as a scientist. He died in Versoix near Geneva on October 2, 1946 and was buried in a local cemetery. The corpse of Prof. I. Moscicki, brought to Poland in 1993, rested next to Gabriel Narutowicz and Stanislaw Wojciechowski in the Presidential Crypts in St. John's Cathedral in Warsaw.

Prof. Ignacy Moscicki published about 60 scientific works in Polish, French, and German languages. He was awarded an honorary doctorate by Lviv Polytechnic, Warsaw Polytechnic, La Sorbonne, and the Universities of Dorpat, Freiburg, Warsaw, and Vilnius. He is known not only as the inventor but also as the father of the chemical industry in Poland.