

V 51  
H-86



3r

H-86

**Andrzej  
Hrynkiewicz**



JOINT INSTITUTE FOR NUCLEAR RESEARCH

СЗГ  
Н-86

Andrzej  
Hrynkiewicz  
1925 – 2016

154295

Dubna, 2019  
БИОГРАФИЧЕСКАЯ  
БИБЛИОТЕКА  
ОИЯИ

Compiled by W.Chmielowski, B.Starchenko, I.Shcherbakova  
Translated by I.Kronshtadtova

Photographs are from the JINR archive and the family archive of A.Z.Hrynkiewicz.

**Andrzej Hrynkiewicz. 1925–2016.** — Dubna: JINR, 2019. — 52 p.: photos.

ISBN 978-5-9530-0510-4

The publication is devoted to opening of an alley in the territory of JINR named after the famous Polish scientist and scientific research organizer Andrzej Hrynkiewicz.

ISBN 978-5-9530-0510-4

© Joint Institute for Nuclear  
Research, 2019

Professor Andrzej Hryniewicz was born on 29 May 1925 in the city called Vilna (at that time the territory of Poland, now Vilnius, Lithuania). Because of the German occupation Polish schools were closed, thus after passing the final examinations in the underground senior school in 1943 he began to study at the underground Stefan Batory University. In July 1944, A.Hryniewicz took part in the Operation "Ostra Brama" (military operation of the underground Polish Home Army to liberate Vilnius from the Germans). In January 1945, he was arrested by the NKVD and exiled to Donbass to work in a mine. In August 1945, in virtue of the medical opinion, A.Hryniewicz was released, returned to Vilnius and left for Poland.

At first he began studying physics at the Nicolaus Copernicus University in Torun, and then at the Jagiellonian University in Cracow. In 1946, A.Hryniewicz was hired as a junior assistant in the physics department of the Jagiellonian University, headed by Professor Henryk Niewodniczański. A.Hryniewicz defended his Doctoral Degree in 1950 and received the Readership in 1954. Since 1955, he worked at the Institute of Nuclear Physics in Cracow: the Head of Laboratory (1960–1974), the Vice-Director for science and technology (1960–1966), Head of the Laboratory of Nuclear Spectroscopy (1968–1995) and the Director of the Institute (1969–1976). In 1969, A.Hryniewicz received the title of Professor.

The scientist conducted research in the field of nuclear physics, condensed matter physics and medical physics. Together with Professor Jacek Hennel, in 1953 they launched the first NMR spectrometer in Poland. Using protons and alpha particles, which were accelerated in the Cracow C-48 cyclotron, they obtained the world's first Rutherford Backscattering Spectra (RBS). A.Hryniewicz also conducted research of the condensed medium using the Moessbauer spectroscopy method. He also had significant achievements in studying the processes of channeling of charged particles in monocrystals and in the measurement of trace element concentrations in various materials using the PIXE method.

He gained knowledge and scientific experience in a number of the world's best laboratories: MIT in the USA, JINR in Dubna, CNRS Center for Nuclear Research in Strasbourg and University of Nancy (France), University of São Paulo (Brazil), and University of Leuven (Belgium).

He brought a new research method from each long trip.

In 1958–1959 A.Hryniewicz was in the USA at the Massachusetts Institute of Technology (Cambridge), where he together with Professor Martin Deutch developed the perturbed angular correlation method and made the first measurement. This method was subsequently applied by A.Hryniewicz at the Laboratory of Nuclear Reactions, JINR. The method was used for measurement of magnetic moments of atomic nuclei excited state or inner super-thin magnetic field. Until today, the values of super-thin magnetic fields on the nuclei of zinc, cadmium and selenium in iron, cobalt and nickel, measured at FLNR JINR by Professor A. Hryniewicz and his graduate student (current Professor) Krzysztof Krulas, are cited.

The results of the research were presented by visiting over 100 scientific institutes, as well as at several dozen conferences and science schools. He was a member of scientific committees of about 30 international conferences, the chairman of the Scientific Councils of several Polish institutes. He was the chairman of the Organizing Committee of 29 Schools of Physics in Zakopane, which in 1973 became international and transformed into the world-famous scientific conferences of the School of Physics.

Results of his scientific research are presented in 160 publications, including those published in 118 world-known journals, 4 monographs and 44 popular science articles. He was the scientific leader of 45 Candidates of Science, 9 of whom received the title of Professor and 9 became Doctors of Science.

Splendid organizational features of A.Hryniewicz should be mentioned especially. He was director of the Institute of Physics of the Jagiellonian University (1969–1972), director of the Institute of Nuclear Physics of the Polish Academy of Sciences in Cracow (1969–1976), Vice-Director of JINR (1966–1968). He made a considerable contribution to the development of JINR during the transformation of the social and political system in our countries in the 1990s. In 1991–2007 he was Plenipotentiary of the government of the Republic of Poland to JINR. Professor Andrzej Hryniewicz played an important role in the development of modern physics in Poland. His wise and careful activities raised the prestige of Polish physics and the Joint Institute for Nuclear Research in the world.

A.Hryniewicz was much respected and acknowledged by the scientific community. He received the honorary doctor degree of three Polish Universities and in 1999 he was conferred the title "Honorary Doctor of JINR".

He was member of the Polish Academy of Sciences since 1969 and of the Polish Academy of Culture and Knowledge since 1989, titular member of the European Academy of Science, Art and Literature, member of the American physical society and many other famous scientific societies.

Professor A.Hryniewicz was a tireless promoter of environmental science. He made a great contribution to education of the public in the fields of ecologically pure methods of producing energy. He was a consistent supporter of the use of nuclear energy for peaceful purposes and thought that the fear against nuclear energy is born only because there is no true information on this topic.

In 1996 Andrzej Hryniewicz received the Prize of the Prime-Minister of Poland for long standing scientific work, and in 2005 – the highest state decoration – the Grand Cross of the Order of Polonia Restituta.

For fruitful work in the development of international cooperation in the field of nuclear research, A.Hryniewicz was awarded the Russian Order of the Red Banner of Labour and the Order of People's Friendship. Without any doubt, the scientist was one of the most outstanding figures in Polish physics after 1945.

He died on 13 October 2016 in Cracow, leaving his wife Galina and daughter Agnieszka.

*Mieczysław Budzyński*  
*Michael Waligórski*  
*Władysław Chmielowski*

## To Andrzej Zygmunt Hrynkiewicz

(to an old friend and a quiet alley)

It was in 1963. I was 30 at the time, G.N.Flerov was 50; at the invitation of Professor Henryk Niewodniczański we arrived in Cracow to the International conference on nuclear physics. For me it was the first visit abroad; everything was unusual, beautiful and interesting. In the new modern building of the Institute of Nuclear Physics, where the conference was held, its director – a famous scientist Professor Henryk Niewodniczański was Chairman, and not in the least famous Professor G.N.Flerov was an honorary guest. Younger scientists made reports. I was among them, together with Andrzej – a handsome young man, a very talented scientist, as many people said. We heard this characteristic many a time later, even from the eminent director.

I remember that I was speaking at the conference about a possibility to accelerate heavy and multi-charge ions up to high energies and that we had done this and even studied several interactions of complex nuclei with promising results. Andrzej spoke about other things. He spoke about the monocrystal Ge of  $1\text{ cm}^3$  in size, cooled to the temperature of liquid nitrogen, to become a detector of gamma-rays with high energy resolution. "High" means a 100 times better than our crystals NaI. I was listening to him with great interest. This Ge led Andrzej to Dubna where he and his group were the first to start at our laboratory the new spectroscopy of atomic nuclei. Later, while he was JINR Vice-Director, he greatly developed this method at JINR. Professor A. Hrynkiewicz very quickly became famous as a splendid experimenter, enthusiastic researcher who bravely conducts complex experiments. He was the youngest in the International board of experts of TUPAC and TUPAP on the discovery of new elements. The fact that the priority in the discovery of element 102 is acknowledged as made by scientists of our Institute, and element 105 is called dubnium shows his big scientific and intellectual contribution.



*They say that true nature of people reveals itself in difficult times, even in trouble. It is possible! In difficult for our Institute times two men, Andrzej Hrynkiewicz and Richard Sosnowski, played a great role in the stabilization of the situation at the Institute, which later strengthened and straightened out, and difficult times, as usual, were quickly forgotten. Every time he arrived in Dubnaw we found time to discuss our issues. He would ask me what I thought about the current situation, where I saw the way out from our difficult life. We were absolutely frank to each other; I felt that he grasped my ideas in a single flash, sometimes with critics, emotionally, but always very wisely. When he left I continued for some time to "talk" to him about things we failed to discuss during our meeting.*

*Once when I was in Cracow Galina and Andrzej invited me to their suburban house for the weekend. Those were wonderful days of discussions between not very young people (Galina not counted). When we came back to Cracow, at the crossroads with the streetlight, a car slightly pushed us. Andrzej got out of the car and started to argue with the absent-minded driver. Galina closed her ears with her palms. "Do you feel unwell?" I asked anxiously. "No, but only you could know how he is swearing, this horrible slang!" "But he is right," I said. "But he is an Academician," she said with regret. No, Galina - Andrzej is not just an Academician, he is a people's Academician! Now I would say - an international Academician! I am sure everybody would agree.*

*I have never thought, my unforgettable friend, that I will have to talk with a plaque where your name is inscribed. But the plaque and the alley, these modest marks of reminiscences about you, will warm my soul to the end of my life.*

*Yuri Oganessian*

*Dubna, 02 March 2019*

*Professor Andrzej Hrynkiewicz is one of the brightest figures of the senior generation of the international community of JINR scientists.*

*He was Plenipotentiary of the government of the Republic of Poland to JINR for many most difficult years for the Institute (1991-2007) and made an invaluable contribution to preserving JINR and its scientific traditions, to the development of scientific ties of leading universities and scientific centres of Poland with JINR. His keen critical views never prevented him from constantly advocating the interests of JINR and its further development as a multidisciplinary world centre of science, pressing member states for execution of their responsibilities. This work in the end gave JINR an opportunity to transfer to the stage of development in 2007.*

*His active work in TUPAC and TUPAP was of great importance in the acknowledgement of achievements of JINR in the discovery of new elements, and one of the results of this work was conferring the name Dubnium to element 105 in 1997.*

*Everybody who closely knew this wonderful man and scientist will always remember his proverbial phrase – “JINR is our common home on the banks of the Great Russian River Volga”.*

*Mikhail Itkis*





Poland, the city of Toruń



Tatry Mountains, 1964. Participants of the winter physics school



Dubna, 1966. JINR Vice-Director A.Hryniewicz (Poland) and JINR Director N.Bogolubov (Russia)



Dubna, 1964. XII International Conference on High Energy Physics. A.Hryniewicz (Poland), J.Teillac (France), G.Flerov (Russia) and H.Niewodniczański (Poland)



Dubna, 1968. JINR Director N.Bogolubov, LTP Director D.Blokhintsev and A. Hryniewicz



Dubna, 1968. JINR Directorate: N.Bogolubov (Russia), A.Hryniewicz (Poland), N.Sodnom (Mongolia)



Dubna. G.Flerov and A.Hryniewicz

Dubna, 1975. A.Hrynkiewicz,  
JINR Administration Director  
V.Karpovsky, N.Bogolubov



Dubna, 1975. A.Hrynkiewicz and A.Baldin





Cracow, 1979. A.Hryniewicz and LNP Director I.Frank at the PAS Institute of Nuclear Physics



Dubna, 1970. Nguyen Dinh Tu (Vietnam) and A.Hryniewicz



Dubna, 1980. The JINR Scientific Council. In the centre A.Hryniewicz and H.Lizurej (Poland)



Protvino, 1978. The JINR Scientific Council Members on an excursion at IHEP (Protvino)



Dubna, 1982. A.Kuznetsov, A.Hryniewicz, G.Flerov



Dubna, 1985. A.Hryniewicz, A.Pisarev and P.Bogolubov



Dubna, 1988. A.Hrynkiewicz, R.Taraszkiewicz, R.Sosnowski



Troitsk, 1986. INR Director A.Tavkhelidze (Russia) and A.Hrynkiewicz



Dubna, 1985. The JINR Committee of Plenipotentiaries. Polish delegation: J.Janik, A.Hrynkiewicz and R.Sosnowski



Dubna, 1985. Ts.Bonchev (Bulgaria), A.Hrynkiewicz (Poland), D.Barb (Romania)





Dubna, 1991. The JINR Committee of Plenipotentiaries



Dubna, 1991. A.Hrynkiewicz and B.Saltykov (Russia)



Dubna, 1991. With B.S.Yuldashev (Uzbekistan)



Dubna, 1994. With S.V.Burov (LTP)





Dubna, 1995. C.Detraz (France), H.Schopper (Germany), F.Didak (Germany),  
A.Hrynkiewicz (Poland)



Dubna, 1995. J.Janik and A.Hrynkiewicz (Poland), F.Lehar (France), V.Kadyshevsky (Russia)



Dubna, 1996. Celebration of the 40<sup>th</sup> anniversary of JINR. Ts.Vylov (Bulgaria), A.Hryniewicz (Poland), A.Sissakian, B.Saltykov and V.Kadyshevsky (Russia)



Dubna, 1996. The JINR Committee of Plenipotentiaries. A.Hryniewicz and J.Knapik (Poland)



Dubna, 1996. Celebration of the 40<sup>th</sup> anniversary of JINR. A.Hryniewicz with the Polish delegation



Dubna, 1996. A.Hryniewicz is presenting the memorable gift from Poland



Warsaw, 1996. Scientific and technical exhibition "People near Atom". A.Hrynkiewicz, J.Niewodniczański, M.Kozłowska (Poland), V.Kadyshevsky (Russia)



Warsaw, 1996. At the opening of the scientific and technical exhibition "People near Atom"



Warsaw, 1996. Scientific and technical exhibition "People near Atom".  
V.Kadyshevsky and A.Hryniewicz





Dubna, 1997. G.Kozlov (Russia) is presenting the Order of Friendship to Plenipotentiary of the Republic of Poland A.Hryniewicz



Dubna, 1997. The Polish delegation congratulates A.Hryniewicz



Cracow, 1996. The H.Niewodniczański Institute of Nuclear Physics. B.Wodnicka and A.Hryniewicz



Dubna, 1997. Yu.Oganessian, R.Sosnowski, A.Hryniewicz



Dubna, 1997. With V.Aksenov





Dubna, 1997. With J.Janik



Dubna, 1997. A meeting of the permanent committee of JINR CP on improving scientific and financial policy and structure of the Institute, Chairman – A.Hryniewicz



Dubna, 1998. With I. Wilhelm (Czech Republic)



Dubna, 1999. A. Hryniewicz and A. Budzanowski (Poland)





Dubna, 1999. With A.Lyubimov



Dubna, 1999. E.Suminska, A.Soltan, B.Lopacka and A.Hryniewicz (Poland)



Dubna, 1998. R.Sosnowski (Poland), V.Aksenov (Russia), S.Rakhmanov (Belarus),  
A.Hryniewicz and J.Janik (Poland)



Dubna, 2000. The JINR Scientific Council



Dubna, 2000. The JINR Committee of Plenipotentiaries members on an excursion at the Nuclotron. A.Malakhov (Russia), I.Opra (Romania), P.Hedbávný (Czech Republic), S.Dubníčka (Slovakia), E.Suminska (Poland), A.Hrynkiewicz (Poland)



Dubna, 1999. Ceremonial opening of the bust to Academician G.Flerov



Dubna, 2000. Opening ceremony of the photo exhibition "Poland on the Baltic Coast" in the JINR Scientists' Club



Dubna, 2001. J.Niewodniczański and A.Hryniewicz



Dubna, 2001. E.Suminska (Poland), S.Ivanova (Russia), A.Hryniewicz (Poland),  
B.Lopačka (Poland), A.Soltan (Poland)





Dubna, 2001. The round-table meeting "Poland at JINR". R.Sosnowski (Poland), V.Zhabitsky, A.Sissakian, V.Kadyshevsky (Russia), A.Hrynkiewicz and J.Niewodniczański (Poland)



Dubna, 1999. I meeting of the Coordination Council on cooperation of JINR with scientific centres of Poland. Plenipotentiary of RP to JINR A.Hrynkiewicz is speaking



Dubna, 2002. Yu.Oganessian and A.Hryniewicz



Dubna, 2003. E.Suminska and A.Hryniewicz



Dubna, 2002. Yu.Oganessian and A.Hrynkiewicz



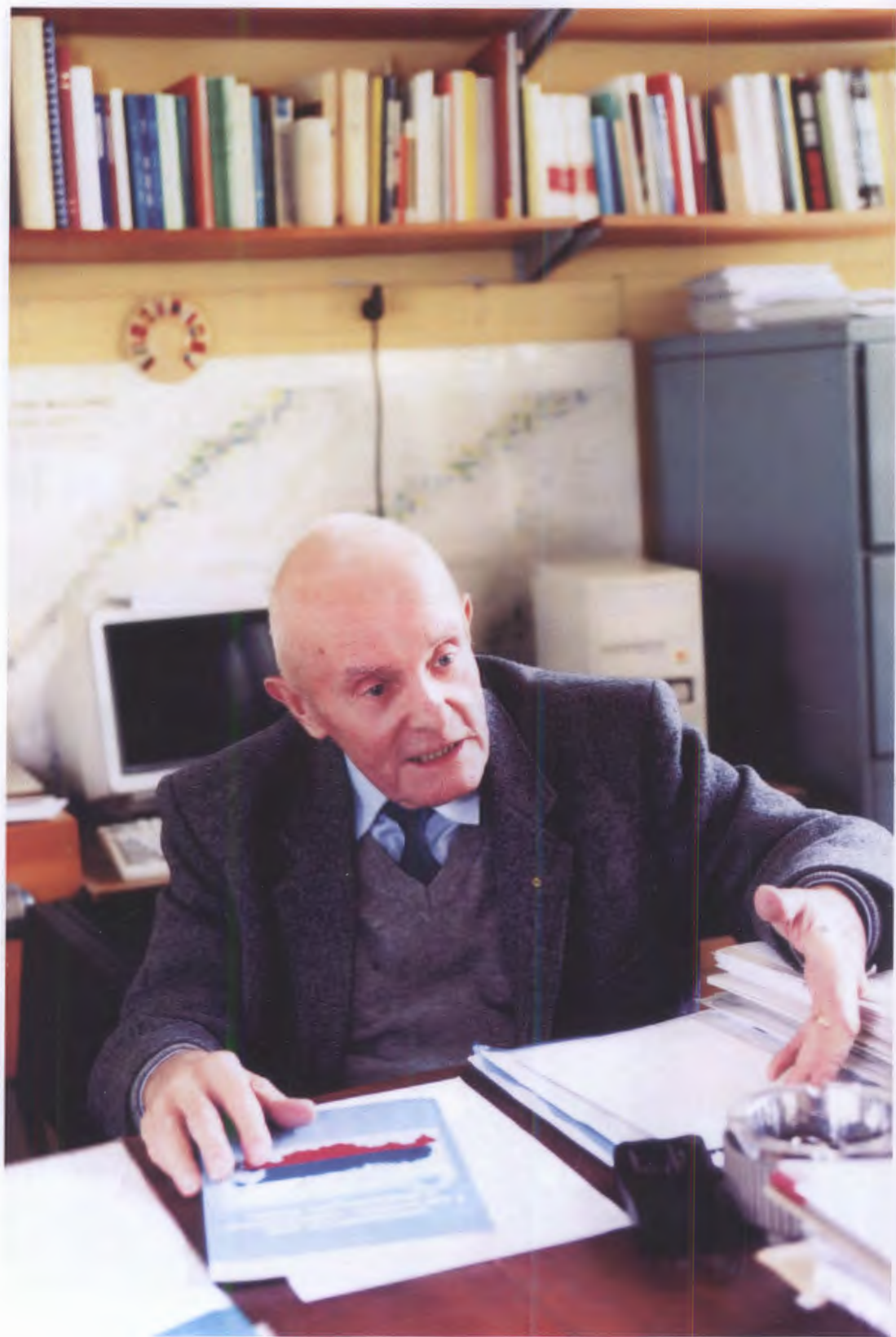
Dubna, 2003. E.Suminska and A.Hrynkiewicz



Dubna, 2006. D.Ellis (CERN), P.Bogolubov (Russia), A.Hryniewicz (Poland), J.Janik (Poland), V.Kadyshevsky (Russia), V.Kantser (Moldova)



Dubna, 2006. A.Hryniewicz and JINR staff members awarded with the Medal "50 Years of Poland at JINR"





Dubna, 2006. The 50<sup>th</sup> anniversary of JINR. A.Hryniewicz is speaking



Dubna, 2006. The 50<sup>th</sup> anniversary of JINR. Yu.Oganessian, A.Hryniewicz, E.Suminska



Dubna, 2006. With the wife Galina



Świnoujście (Poland), 2006. A.Hryniewicz with E.Chmielowska







Warsaw, 2007. The Agency on Atomic Energy of Poland. Ceremonial events on transfer of the leadership of A.Hryniewicz of the committee on cooperation with JINR





Cracow, 1999. A.Hryniewicz is presented with the Diploma of Doctor Honoris Causa of AGH University of Science and Technology



Vatican, 1995. The family of A.Hryniewicz with Pope John Paul II



Dubna, 1993. Members of the international Scientific Council of JINR



19–23 June 1989. Transferrmium Working Group visits the Berkeley Laboratory. R.C.Barber, N.N.Greenwood, A.Z.Hryniewicz, Y.P.Jeannin, M.Lefort, M.Sakai, I.Ulehla, A.H.Wapstra, G.T.Seaborg, D.H.Wilkinson



Konin (Poland). A.Hryniewicz and Yu.Oganessian