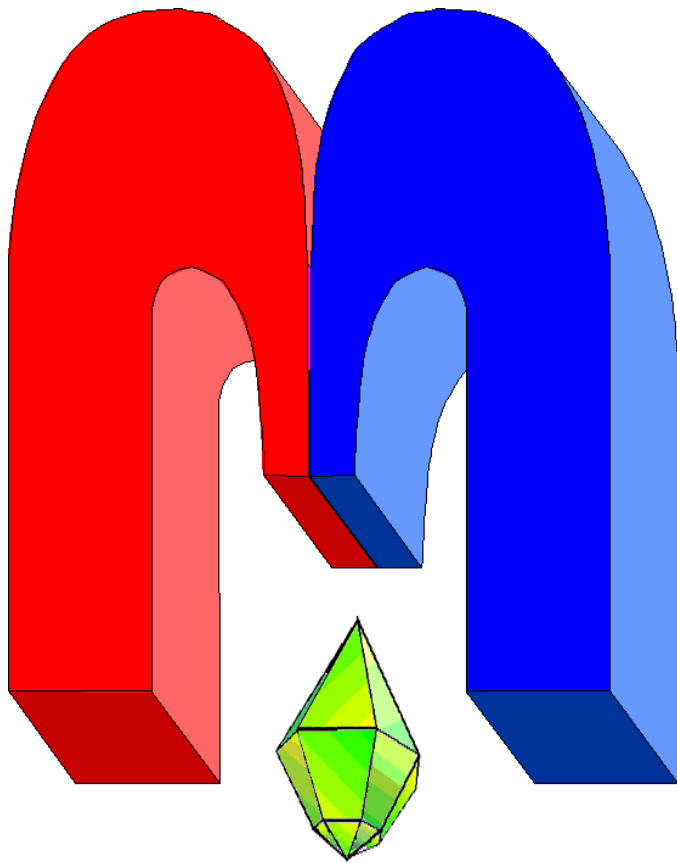


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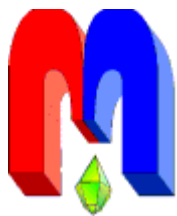
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* In Kazan University the Electron Paramagnetic Resonance (EPR) was discovered by Zavoisky E.K. in 1944.

Professor Yury Bunkov

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On August 29, 2020, we have celebrated the 70-th birthday of the world wide-known outstanding physicist - **Yury Bunkov**.

He graduated from Moscow Institute of Physics and Technology in 1970. His diploma work was carried out at the Kapitza Institute for Physical Problems. The title of the thesis: “Nonlinear NMR in antiferromagnetic MnCO_3 and CsMnF_3 ” under scientific guidance of Academician A.S. Borovik-Romanov. Since he joined the Kapitza Institute, 21 years he was at Ph.D studies, then worked as Researcher and Leading scientist. Later on he moved and during 21 years worked as Director of Research at CNRS, Institute Néel, Grenoble, France. From 2010 to 2018 Prof. Yury Bunkov collaborated with the Department of Quantum Electronics and Radiospectroscopy of Kazan Federal University as invited Professor and Leading Researcher, where together with Professor Tagirov M.S. he established a new direction of scientific research – “Spin superfluidity in solid magnets”. Working in Kazan, he acquired great respect and sincere friends.

Research highlights of Professor Yury Bunkov:

1. Discovery and study of spin superfluidity, quantum coherent transport of magnons in superfluid ^3He , observation of spin super-flow over long distances, critical Landau velocity, phase slip, Josephson phenomenon, quantum spin vortex, Goldstone modes (second sound), etc.;
2. Discovery and study of spin superfluidity in solid antiferromagnets with coupled nuclear-electron precession. Observations of Bose-Einstein condensation (BEC) of magnons, sec-



Professor Bunkov

ond sound and non-resonant excitation;

3. Investigations of coupled nuclear–electron precession in antiferromagnets. Discovery of new methods of spin-echo: single pulse, frequency-modulated and parametric echoes (“Bunkov echo”);
4. Development of ultra-low temperature technology. Design and manufacture of a powerful dilution refrigerator at the institute Kapitza. Design and manufacture of nuclear demagnetization stages for the University of Helsinki, Kapitza Institute, the University of Kosice and Néel Institute, Grenoble. A world record for cooling ^3He to 0.08 mK was achieved;
5. Development and manufacture of a dark matter detector based on the properties of superfluid ^3He . The detector is hypersensitive since it operates at 0.1 mK;
6. The development of Q-bit, based on magnon BEC.

All results of his own research or in collaboration were published in top-rank scientific journals, such as *Nature* or *Physical Review Letters*, and in books or chapter in scientific monographs. Prof. Yury Bunkov actively collaborates with his colleagues in Russia, Finland, UK, France, Germany, Japan, and Slovakia. That is why we can certainly call him a Citizen of the World, the additional arguments for such conclusions are Awards and Honors of Prof. Bunkov:

1993: State Prize of the Russian Federation “For the discovery of spin superfluidity”.

2001: Docteur ”Honoris Causa”, Université Pavel Safarik à Kosice, Slovaquie.

2008: Fritz London memorial prize, Duke University, USA. “For discovery and understanding of the Phase Coherent Spin Precession and Spin Superfluidity of $^3\text{He-B}$ ”.

2010: Member of the Academy of Europe “Academia Europaea”, Cambridge.

The total list of Yu. Bunkov’s publications contain 260 papers in refereed journals. The Web of Science core collection for all years, started from 1974, contains 208 of his publications and 2984 citations, h-index is 30. Yu. Bunkov is an editorial board member of the electronic journal *Magnetic Resonance in Solids*. He successfully supervised 14 PhD students in Soviet Union, Slovakia, France and Russia.

We wish Professor Yury Bunkov good health and happiness, many years of fruitful scientific activity and new outstanding results and discoveries!