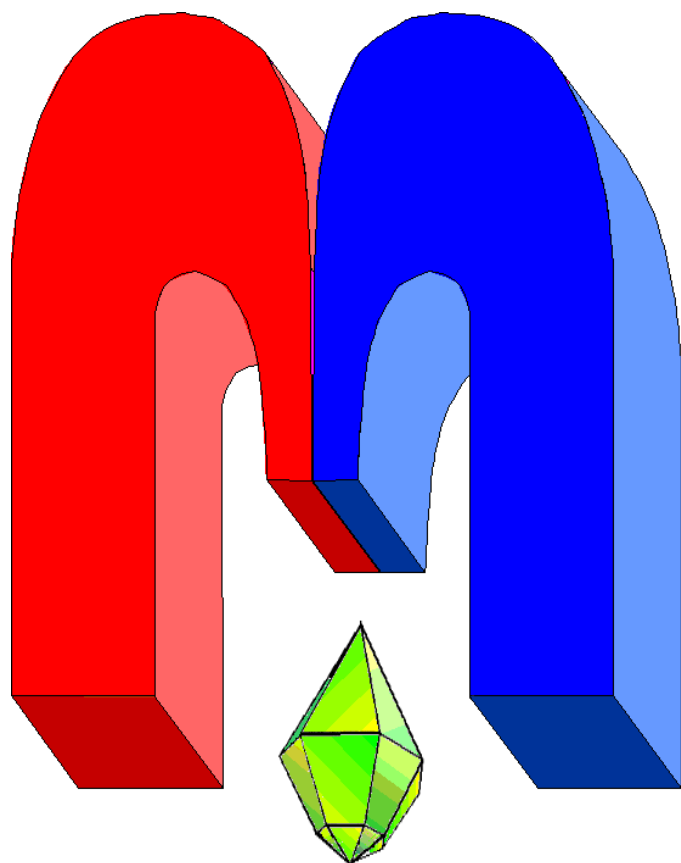


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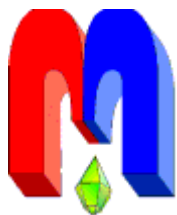


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*

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

XV years of International Youth Scientific School "Actual problems of the magnetic resonance and its application"[†]

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In November, 2012, the Kazan Federal University (KFU) fifteen time has invited young scientists from all the Russia and abroad for traditional meeting to discuss the modern trends in magnetic resonance. 15 years ago, in 1997, the joint project of Kazan University and Zavoisky Physical Technical Institute of Russian Academy of Sciences has renewed the work of the well known in Soviet Union the "G.I. Skrotskii School on a magnetic resonance", which promote creation of a leading position USSR, and later, Russia in a world science in the field of the theory and experiment of magnetic resonance.

Electron paramagnetic resonance phenomenon was discovered by E.K.Zavoiskii in Kazan in 1944 is one of outstanding discoveries in physics of the XX century. It allows obtaining rather rich, occasionally unique information about a structure and internal interactions in condensed matter at a micro- and nanoscopic scale. This and the numerous fundamental investigations carried out by the scientists of the KFU and Zavoisky PTI have made Kazan as well known center of the magnetic resonance in the world. As a matter of fact in Kazan highest level international conferences on the magnetic resonance was organized, the international journal "Applied Magnetic Resonance" and electronic international magazine "Magnetic Resonance in Solids" are published, International Zavoisky Prize and Zavoisky Award for Kazan young physicists were established.

From the first meeting in 1997, the Program of the School is determined by School presidentship (rector – Prof. M.S. Tagirov, and provost – Prof. V.A. Zhikharev) and Program committee, which include world known specialists in magnetic resonance Prof. V.A. Atsarkin (the chairman of committee, Moscow), Prof. A.V. Aganov (KFU, Kazan), Prof. B.I. Kochelaev (KFU, Kazan), Prof. I.V. Ovchinnikov (Zavoisky PTI, Kazan), RAS academician K.M. Salikhov (Zavoisky PTI, Kazan).

The first lecturers of our School were :

- V.A. Atsarkin (Institute of Radio Engeniring of RAS, Moscow)
"The investigation of HTSC by the method of longitudinal electronic relaxation"
- B.I. Kochelaev (KFU, Kazan)
"Magnon bottle-neck in HTSC"
- S.V. Verkhovskii (Institute of Metal Physics of RAS, Ekaterinburg)
"NMR research of a magnetic states of Cu atoms and reasons of T_c degradation in radiation-disordered YBaCuO"
- M.A. Teplov (KFU, Kazan)
"Inhomogeneous distribution of charges and spins in CuO₂ planes of superconducting cuprates 123"

[†] This material is prefaced a publication of papers selected at XV International Youth Scientific School "Actual problems of magnetic resonance and its application", Kazan, 22 – 26 October 2012.

- Yu.I. Talanov (Zavoisky PTI, Kazan)
“A Research of distribution of a magnetic field in II-type superconductors using of surface paramagnetic probes”
- A.V. Dooglav (KFU, Kazan)
“NMR and NQR in nonsuperconducting 123-compounds”
- Yu.V. Yablokov (Zavoisky PTI, Kazan)
“A Paramagnetic resonance of magnetic centers in La-Sr-Cu-O and its structural analogs”
- M.V. Eremin (KFU, Kazan)
“A Model of conduction band in HTSC”
- S.B. Orlinskii (KFU, Kazan)
“EPR investigation of structural and dynamic effects in fullerenes”
- S.M. Ryabchenko (Institute of Physics NASU, Kiev)
“NQR research of the superconducting state of HTSC”

Above-mentioned lecturers are the leading scientists in the field of the magnetic resonance and its applications for the research of high-temperature superconductors.

Over fifty-years period of our School functioning there were more than 150 lecturers. Among them were: Nobel Prize winner K.A. Muller (Swiss), profs. H. Suzuki (Japan), G. Eska (Germany), H. Godfrin (France), A. Shengelaya (Swiss-Georgia), K. Kumagai (Japan), U. Eichhoff (Germany), K. Kono (Japan), Yu. Bunkov (France), D. Konstantinov (Japan), A. Bussmann-Holder (Germany), H. Keller (Swiss), K. Babershke (Germany), Hermannsdorfer (Germany), F. Borsa (Italy), B. Tsukerblat (Israel), S. Bertana (Spain), J.-P. Nacher (France), A.B. Roitsin (Ukraine), I.I. Geru (Moldova), T. Sanadze (Georgia), S.N. Lukin (Ukraine). We also have to mention the lecturers from Russian Federation: profs. F.S. Dzheparov (Moscow), E.B. Feldman (Chernogolovka), A.I. Smirnov (Moscow), A.V. Kessenikh (Moscow), A.S. Moskvina (Ekaterinburg), V.D. Skirda (Kazan), V.V. Dmitriev (Moscow), L.R. Tagirov (Kazan), V.I. Chizhik (St.-Petersburg), I.A. Garifullin (Kazan), M.M. Zariyov (Kazan), A.E. Mefed (Fryazino), B.Z. Malkin (Kazan), I.I. Proskuryakov (Puschino), D.A. Tayursky (Kazan), T.A. Babushkina (Moscow), G.B. Teitelbaum (Kazan)...

More than 600 young scientists, “schoolboys”, have taken part in the School meetings, made their oral reports and participated in hot discussions. Along with the “schoolboys” the undergraduate students, students of master course, post-graduate students, PhD students and young scientists of all high schools and academic institutes of Kazan have an active part in School events. Every year the competition among the young scientist reports takes place and the Program Committee members names several best reports. Since 1997 more than 50 School Diplomas and very valuable gifts were presented to winners.

Last five years among the School events the important role the “Master classes” plays. In frame of the “master classes” young scientists have an opportunity to work on the top level scientific equipments, produced by brand-name Company – BRUKER.

The financial support of the School regularly was provided by Russian Academy of Sciences, Tatarstan Academy of Sciences, Russian Foundation for Basic Researches, “Dynasty” Foundation and BRUKER Ltd (Moscow).

XV School meeting held in KFU from 22 up to 26 of October 2012. The 14 lectures were reported by professors from Moscow, Grenoble, Kazan, Chernogolovka and Kiev, 49 oral presentations were done by “schoolboys” from Kazan, Moscow, Ekaterinburg, Syctyvkar, Berlin, St.-Petersburg, Ufa, Rostov-on-Don, Minsk, Novosibirsk, Ivanovo, Kharkov, Nizhny Novgorod. The “master classes” on High Frequency EPR and High Resolution NMR were organized by Dr. S.B. Orlinsky and Prof. V.V. Klochkov.

The competent juries noted 16 young scientists reports, among which three reports were awarded by Diplomas and gifts:

- Aleksandrov Artem (Kazan Federal University, Kazan)
“Nuclear pseudo quadrupole resonance of ^{141}Pr in Van Vleck paramagnet PrF_3 ”
- Zalessky Sergey (Institute of Organic Chemistry, Moscow)
“Investigation of cholesterol+model of biological membrane complex by NMR spectroscopy”
- Safiullin Kayum (Kazan Federal University, Kazan and Ecole Normal Superieur, University Paris-6, Paris)
“Imaging using polarised ^3He at low magnetic fields”

The XV School Program committee together with editors of the international electronic magazine “Magnetic Resonance in Solids (MRSej)” recommended to selected young participant of the School to present the electronic versions of papers for their consequent publication in MRSej.

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