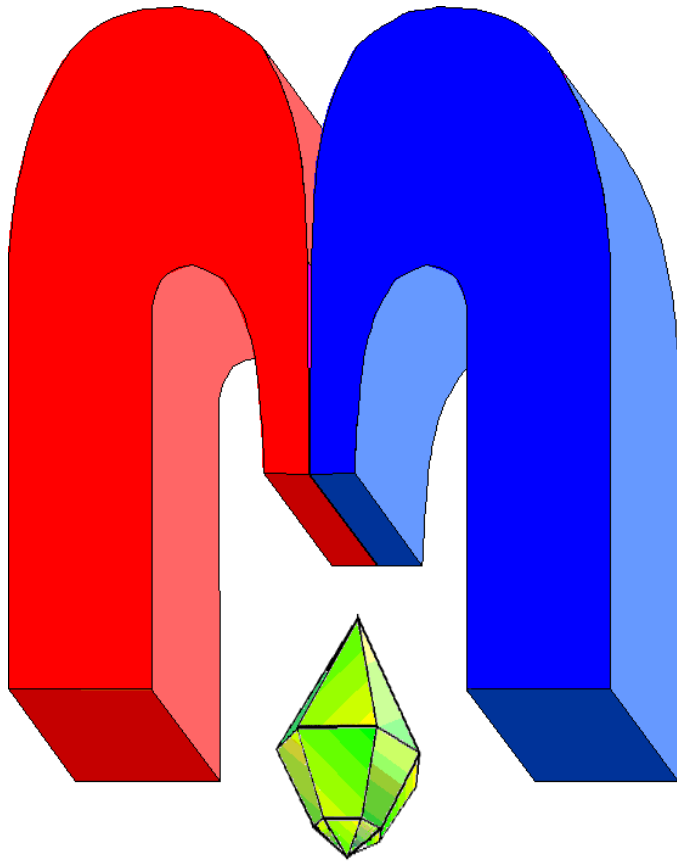


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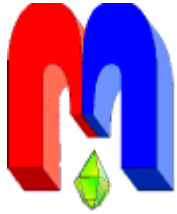


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In Kazan State University the Electron Paramagnetic Resonance (EPR) was discovered by Zavoisky E.K. in 1944.

XII International School for Young Scientists
«Actual problems of magnetic resonance and its applications»
Kazan, 5 - 9 of October, 2009.

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School for Young Scientists: History and Traditions

The School for young scientists «Actual problems of magnetic resonance and its applications» is sponsored annually by the Kazan State University and the E. K. Zavoysky Physical Technical Institute of the Russian Academy of Sciences since 1997.

Magnetic resonance is one of the outstanding discoveries in physics of the XX-th century, experimental method giving the detailed information on structure and interactions in condensed matter on atomic level. Presently, the magnetic radiospectroscopy has become a wide and dynamically developing area of science with unique applications in chemistry, biology, geology, medicine... Kazan is the world-known centre of magnetic resonance. In



Registration

Kazan international conferences on magnetic resonance take place regularly, international magazines «Applied Magnetic Resonance» and electronic magazine «Magnetic Resonance in Solids» are published, prestigious international award of E.K.Zavoysky for achievements in the field of magnetic radiospectroscopy and the Kazan Young Scientist award of E.K.Zavoysky for achievements in physics are awarded.

School administration (Rector - professor M.S. Tagirov, Kazan University and Pro-rector - professor V.A. Zhikharev, Kazan Technology University) and Program committee (professors V.A. Atsarkin (Institute of Radioelectronics , Moscow), A.V. Aganov (Kazan University, Kazan), B.I. Kochelaev (Kazan University, Kazan), the corresponding member of the Russian Academy of



Rector of School, Professor
M.S. Tagirov

Sciences K.M. Salihov (Zavoysky Physical Technical Institute of RAS, Kazan)) define the main theme of each School. For example, the first School, School-1997, has been devoted to the application of magnetic resonance in researching of the structure of high-temperature superconductors and the superconductivity nature in them. Sometimes, the School coincides with scientific conferences in Kazan, and then "schoolboys" have an opportunity to participate in discussions of the latest scientific news. For example, the eighth School, School-2004, was "adjoined" the international conference

«NanoRes2004», devoted to magnetic resonance researching of nanoscale materials.

As a whole, since 1997 more than 100 world-known scientists in the field of magnetic resonance from Germany, France, Switzerland, the USA, Japan, Russia, Ukraine, Moldova, Georgia came to lecture at the School «Actual problems of a magnetic resonance and its applications».



Deen of the Department of Physics of Kazan University, Prof. A.V. Aganov

In Memory to Professor Teplov

The subjects and selection of lecturers of the last School, School-2009, were suggested by that this year marks the 70th anniversary of the date of birth of the talent physicist-experimenter, former chief of the chair of quantum electronics and radiospectroscopy, the supervisor of Magnetic Radiospectroscopy Laboratory in Kazan University, Mikhail Aleksandrovich Teplov. The scientist who became world famous for his pioneer work on magnetic resonance in van-Flek paramagnets, M.A. Teplov always aspired to development of newer and newer horizons for the application of magnetic resonance. One of the most capable pupils of the classic of paramagnetic resonance, S.A. Altshuler, he perfectly understood the role of the Teacher, and gave much effort to upbringing of the new generation of researchers on magnetic radiospectroscopy. That is why M.A. Teplov was one of the most active initiators of bringing our School to life, and was one of its first lecturers.



Session in Memory to Professor Teplov

Lecturers of School-2009

Lecturers of School-2009 were scientists-colleagues, who actively cooperated with M.A. Teplov, representatives of world scientific centers, which M.A. Teplov fruitfully contacted with, his pupils who have become prominent researchers in various areas of magnetic radiospectroscopy:

- Prof. M.S. Tagirov - the Rector of the School (Kazan University, Kazan, Russia)
- Corresponding member of the RAS V.V.Dmitriev (Kapitsa Institute, Moscow, Russia)
- Prof. J.M. Bunkov (Neel Institute, Grenoble, France)
- Prof. G.B. Tejtelbaum (Zavoiski Institute of RAS, Kazan, Russia)
- Prof. V.A. Atsarkin (Institute of Radioelectronics, Moscow, Russia)
- Prof. M.S. Volkov (Institute of Problems of Chemical Physics of RAS, Chernogolovka, Russia)
- Prof. Yu.G. Rudoj (University of People Friendship, Moscow, Russia)
- Prof. T.A. Vasilenko (Institute of Miner Processes, Donetsk, Ukraine)
- Prof. F.S. Dzheparov (Institute for Theoretical and Experimental Physics of RAS, Moscow, Russia)

Prof. M.V. Eremin (Kazan University, Kazan, Russia)

Prof. K. Kono (RIKEN, Japan)

PhD S.B. Orlinsky (Kazan University, Kazan, Russia)

PhD A.V. Duglav (Kazan University, Kazan, Russia)

PhD J.K. Rozentsvajg (Magnettech GmbH, Germany)

Prof. D.A. Tajursky (Kazan University, Kazan, Russia)

PhD I.R. Muhamedshin (Kazan University, Kazan, Russia).

The topics of lectures included: applications of magnetic resonance for research of magnetic properties of helium-3, structure and magnetic properties of new iron-based high-temperature superconductors were considered, dynamic nuclear polarisation in nanoparticles, theoretical aspects of the spin relaxation in the diluted and disorder systems, a role dipole-dipole interactions in the small particles, new approaches to thermodynamics of strongly correlated systems were discussed; information on new equipment development and new experimental techniques was given. And, certainly, the majority of lecturers have shared the personal memoirs on the remarkable Teacher, the Person and the Scientist - professor of Kazan University Mikhail Aleksandrovich Teplov.

As part of the School-2009 four master-classes were given, during which young researchers had an opportunity to participate in «real-time mode» in the experiments with advanced spectrometers by Bruker Corporation. High-class experimenters Orlinskij S.B. and V.V. Clochkov acquainted young scientists with subtleties of performing EPR and NMR measurements. More than 40 “schoolboys” took part in master-class sessions.



Prof. J.M. Bunkov

Schoolboys of School-2009

Fifty-six young scientists, post-graduate students and masters have presented as part of School-2009 program. Geography of School-2009 is impressive: young researchers came from Dresden, Kaliningrad, Moscow, St.-Petersburg, Nizhni Novgorod, Ufa, Ekaterinburg, Novosibirsk, Kemerovo, Krasnoyarsk, Irkutsk, Baku. Young scientists and post-graduate students of practically all higher institutions and academic institutes of Kazan have taken active part in School activities. School-2009 was a prominent and well-attended event for students of physical faculty of the Kazan University. Fifteen-minute oral reports of "schoolboys" were in detail discussed by lecturers of the School. Remarks of professors Atsarkin, V.A. and Dzheparov, F.S., to whom the School administration would like to extend their profound gratitude, were especially useful for young listeners.

Within School-2009 a competition among young scientists has been held and three best works have been named:

1. Litvinova Z.N. (Institute of Metal Physics, Ural Branch of RAS, Ekaterinburg, Russia.)
“Studying of a nuclear magnetic resonance of ^{17}O in CaMnO_{3-x} ($x < 0.01$)”
2. Lobov A.N. (Institute of Organic Chemistry of RAS, Ufa, Russia)
“Diastereometric distinctions in derivatives N - (2-hydroxyethyl) cytosine”.
3. Platova T.A. (Kazan University, Kazan, Russia)
“Phase stratification in cobaltate NaCoO_2 at the big concentration of sodium”.

Winners of the School-2009 competition received Diplomas and valuable prizes: for those who are not citizens of Kazan - GPS-navigators so that they can easily find their way back to Kazan for future sessions of the School, and Platova T.A. has been presented with a mobile phone as means of continuous communication with her colleagues from the University.



On one of the days of School-2009 all participants, both lecturers, as well as "schoolboys", visited a picturesque place near Kazan - the Raifsky monastery, and also have got a chance to meet the singing ensemble "Pritcha". This trip, together with evening walks in the city, has allowed young scientists to get acquainted with the Past and the Present of our remarkable city - Kazan.

Receipt of Diploma

Conclusions

Despite world financial crisis, the School budget was record-breaking in all of its 12-year history. Administration of School managed to win a grant from the Federal Agency for Science and Innovations. Organization of School-2009, especially such elements as full coverage of travel and lodging for all participants, food during School, cultural program, became possible, in large degree, as a result of financial support of the Federal Agency of the Russian Federation, as well as School's general sponsor Bruker Ltd (Moscow), which representative actively participated in all stages of preparation and carrying out of the School's activities. The Administration and Program committee of the School would like to express their profound gratitude to the Federal Agency for Science and Innovations of the Russian Federation and Bruker Ltd (Moscow).

School-2009 went down in history. Last presentation has been made; last questions and answers to them have been voiced... Emotions have settled, organizational mishaps have been forgotten, and School participants have taken with them impressions about interesting reports, meetings with friends-colleagues, new acquaintances ... Let there be added to them a desire to visit our School «Actual problems of magnetic resonance and its applications» once again. Kazan scientists will be glad to meet you!