

Ministry of Education of Moscow Region
Moscow Region State University



Programme of the 1st international conference on

Reaction Kinetics in Condensed Matter

RKCM'10 – Moscow

September 22 (Wednesday) – September 26 (Sunday)

Moscow Region State University, Moscow, RUSSIA

Moscow – 2010

Welcome to Moscow Region State University!

Moscow Region State University is one of the largest institutions of higher education in the Moscow Region. It was founded in 1931 as Moscow Region Pedagogical Institute and since 2002 it is called Moscow Region State University.

There are 16 Honored Scientists of the Russian Federation, 5 academicians and 5 Corresponding Members of the Russian Academy of Sciences, 8 Laureates of the State Prizes of the USSR and Russia and of the President of the Russian Federation Prize, 193 professors and 375 senior lecturers in the University teaching staff. 70 % of the lecturers have advanced degrees and academic status.

The students of the University get their degrees in 25 fields. The University prepares school teachers on the full range of compulsory education subjects as well as specialists in public and municipal administration, social teachers, physicists, philologists, lawyers, specialists in social and cultural service and tourism, translation, theoretical and applied linguistics, fine arts and folk arts, etc.

The University structure is represented by 15 main faculties, 73 departments and 2 faculties of supplementary education. It consists of the Institute of Linguistics and Intercultural communication, the Institute of Economics, Management and Law, Natural-Ecological Institute, the Institute of Open Education and the following faculties: faculty of Physics and Mathematics, the faculty of Safety of Vital Activities, faculty of Fine Arts and Folk Arts, the faculty of History, Political science and Jurisprudence, the faculty of Psychology, the faculty of Special Pedagogic and Psychology, the faculty of Russian Philology, the faculty of Physical Education, the faculty of Technology and Entrepreneurship.

Moscow Region State University also provides post-graduates courses of various specialities. After completing a post-graduate course student gets a degree of Candidate of Science (according to the chosen specialty) which in view of the formation of the unified European educational space is equated to Ph. D.



Moscow Region State University. Faculty of Physics and Mathematics.

Wednesday, September 22

Opening RKCM'10 09:10 – 09:30



Introductory word

Vice Chancellor for Research & International Co-operation of
Moscow Region State University *S.D. Traytak*

Welcoming speech to participants of RKCM'10

Minister of Education of Moscow Region *L.N. Antonova*

Session 1 chairman *S. Lee* (S. Korea)

- **Charge Recombination in Organic Solar Cells**
M. Tachiya (Japan) 09:30 – 10:00
- **Effect of Interparticle Interaction on Kinetics of
Geminate Recombination of Subdiffusing Particles**
A.I. Shushin (Russia) 10:00 – 10:20
- **Multiparticle $kA \rightarrow 0$ Reaction in Small Volumes**
Z. Konkoli (Sweden) 10:20 – 10:40
- **Abnormal Diffusion, Super-Memory and Relaxation
of Stimulated Electro-Photo-Conductivity in
Compensated Hetero-Semiconductors**
V.Y. Smorodin (USA) 10:40 – 11:00
- Coffee break**  11:00 – 11:30
- **Weak Ergodicity Breaking: from Blinking Quantum
Dots to mRNA Diffusing in the Cell**
E. Barkai (Israel) 11:30 – 12:00
- **Free Energy Gap Law and Nonequilibrium
Phenomena in Charge Recombination of Excited
Donor-Acceptor Complexes**
V.A. Mikhailova (Russia) 12:00 – 12:20
- **Theory and Simulation of Diffusion-Influenced
Bimolecular Reactions**
H.-X. Zhou (USA) 12:20 – 12:50
- Lunch**  13:00 – 14:00


Session 2 chairman *H.-X. Zhou* (USA)

- **Energy Transfer at the Encounters of Chemi-Excited
Ketones with Acceptors: Elucidation of the Probability
per One Collision Using the Frenkel Cage-Effect Theory**
A.V. Trofimov (Russia) 14:10 – 14:40
- **Atomistic Simulation of Self-Heating Reactions in
Al-Coated Ni Nanoparticles**
E.V. Levchenko (Australia) 14:40 – 15:00

• Reaction Kinetics Constrained by Multi-Scale Protein Mobility: the Ultrametric Diffusion Approach <i>V. Avetisov</i> (Russia)	15:00 – 15:20
• A Rigorous Foundation of the Diffusion-Influenced Bimolecular Reaction Kinetics <i>S. Lee</i> (S. Korea)	15:20 – 15:50
• General Theory of the Single-File Multi-Particle Diffusion in Narrow Pores <i>S.O. Yesylevskyy</i> (Ukraine)	15:50 – 16:10
• Hot Charge Recombination in Ruthenium(II)-Cobalt(III) Compounds <i>S.V. Feskov</i> (Russia)	16:10 – 16:30
Coffee break 	16:30 – 17:00
Poster session	17:00 – 18:00
Moscow Region State University tour	18:00 – 19:00

Wednesday, September 23

Session 3 chairman *G. Grampp* (Austria)


• Dynamics of Friction Dependent Processes at Liquid Interfaces <i>E. Vauthey</i> (Switzerland)	09:30 – 10:00
• Effect of Cucurbit[7]uril on the Primary Photoprocesses of Fluorescent Dyes <i>N.Kh. Petrov</i> (Russia)	10:00 – 10:20
• Advances in NMR Diffusion Measurements <i>W. Price</i> (Australia)	10:20 – 10:40
• A Theoretical and Experimental Studying of NMR Contrasting Properties of Nanocomposites Based on Ferric Oxides Stabilized by Arabinogalactan Matrix <i>M.V. Petrova</i> (Russia)	10:40 – 11:00
Coffee break 	11:00 – 11:30
• A “Cage Complex” Method in Chemical Reactions Theory in Solutions and its Application to the Consideration of Multistage Reactions <i>A.B. Doktorov</i> (Russia)	11:30 – 12:00
• Experimental Observation on Non-Markovian Effects: Quenching under Strong Light and the Relevance of the Liquid Structure on Bimolecular Reactions <i>G. Angulo</i> (Poland)	12:00 – 12:20
• Non-Markovian Effects in Kinetics of Quantum Tunneling Reactions Proceeding in Condensed Phase <i>M.V. Basilevsky</i> (Russia)	12:20 – 12:50

Lunch



13:00 – 14:00

Session 4 chairman *W. Price* (Australia)

- **Emitting Species in Conjugated Polymers for Photo- and Electro-Luminescence**
S.-A. Chen (Taiwan) 14:10 – 14:40
 - **Kinetic and Direct Computer Multiparticle Models of the Processes in Photosynthetic Membrane**
G.Yu. Riznichenko (Russia) 14:40 – 15:00
 - **Semi-Analytical Approach to Time-Dependent Trapping Model of Diffusion-Controlled Reactions**
S. Traytak (Russia) 15:00 – 15:20
 - **Diffusional Charge and Exciton Transport in Long Conjugated Molecules: "Molecular Wires" for Photovoltaics?**
J.R. Miller (USA) 15:20 – 15:50
 - **Determination of the Mass Diffusion Coefficient in Melts Using the Light Scattering Method**
N. Bokov (Russia) 15:50 – 16:10
 - **Diffusion Model of Photoaligning in Azo-Dye Layer**
V. Chigrinov (Hong Kong) 16:10 – 16:30
- Coffee break  16:30 – 17:00
- **Structural Macrokinetics of Biomimetic Processes in Artificial Cells**
O.V. Gradov (Russia) 17:00 – 17:20

Conference Banquet



Gallery of Artist restaurant,
19 Prechistenka St., Moscow
(<http://www.gal-h.ru/>) 19:00 – 22:00

Friday, September 24

Excursion to Sergiev Posad 10:00 – 16:00


Saturday, September 25

Session 5 chairman *M. Tachiya* (Japan)

- **Ultrafast Kinetics of Charge Transfer Reactions. Problems of the Reaction Mechanism Recovering from Experimental Kinetics**
M.G. Kuzmin (Russia) 09:30 – 10:00
- **Radiation Induced Fluorescence Decay as a Visualization Tool for Studies of the Kinetic Processes Involving Radical Ions in Solution**
V.I. Borovkov (Russia) 10:00 – 10:20
- **Transient Exciplex vs. Marcus and Radiationless Transition Mechanisms of Electron Transfer Reactions**
I.V. Soboleva (Russia) 10:20 – 10:40
- **Spectroscopic Signatures of Proton Transfer Dynamics in the Complexes with Strong-Short Intermolecular O–H...N Bond in Aprotic Solvents**
M.V. Vener (Russia) 10:40 – 11:00
- **Coffee break**  11:00 – 11:30
- **Photoinduced Electron Transfer in Solid Films in the Presence of External Electric Field**
N. Ohta (Japan) 11:30 – 12:00
- **Magnetic Field Effects on Reaction of Hydrocarbons Oxidation in the Liquid Phase**
Alexey A. Kipriyanov Jr (Russia) 12:00 – 12:20
- **Diffusional Effects on the Reversible Excited-State Proton Transfer. From Experiments to Brownian Dynamics Simulations**
K.M. Solntsev (USA) 12:20 – 12:50
- **Lunch**  13:00 – 14:00

Session 6 chairman *A. Doktorov* (Russia)

- **Nonequilibrium Phenomena in Electron Transfer Reactions**
A.I. Ivanov (Russia) 14:10 – 14:40
- **Kinetic Equations and the Phenomenon of Spatial Structurization for Local Concentrations of Reactants in Spatially Inhomogeneous Solutions**
A.A. Kipriyanov (Russia) 14:40 – 15:00
- **Kinetics of Reversible Reactions between Metastable Reactants in Viscous Solutions**
S.G. Fedorenko (Russia) 15:00 – 15:20
- **MARY – Spectroscopy: Application to Electron Transfer Reactions**
G. Grampp (Austria) 15:20 – 15:50

- **Manifestation of Macroscopic Correlations in the Kinetics of Elementary Irreversible Reactions in Liquid Solutions**
Alexander A. Kipriyanov (Russia) 15:50 – 16:10
- **Electrodifusion with Adsorptive Boundary Conditions**
A.V. Shobukhov (Russia) 16:10 – 16:30
- Coffee break**  16:30 – 17:00
- **Model of Diffusion Kinetics in Heterogeneous Medium**
S.V. Chernyshenko (Germany) 17:00 – 17:20
- Closing RKCM'10** 17:20 – 18:30

Sunday, September 26

Excursion to Moscow
City tour 10:00 – 14:00

Departure

Layout of the RKCM'10 Programme booklet
 was designed and made by **Sergey Traytak**