National University of Science and Technology MISiS
Institute of Solid State Physics of the Russian Academy of Sciences (RAS)
Scientific Council on Physics of Condensed Matter of the RAS
Russian Federal Agency of Scientific Organizations
Russian Foundation for Basic Research
Saxon Academy of Sciences

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VII INTERNATIONAL CONFERENCE DIFFUSION FUNDAMENTALS

NUST «MIS&S»
July 3-7, 2017, Moscow, Russia

Programme

Moscow, 2017

2017 DIFFUSION FUNDAMENTALS

МИСиС

ФЕДЕРАЛЬНОЕ АГЕНТСТВО НАУЧНЫХ ОРГАНИЗАЦИЙ

RUSSIAN FOUNDATION FOR BASIC RESEARCH

RFBR

Sächsische Akademie der Wissenschaften zu Leipzig

2017 DIFFUSION FUNDAMENTALS

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George H. Weiss, Center for Information Technology Maryland, USA
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Local organization committee (alphabetically)

- Boris S. Bokstein
- Alexey O. Rodin
- Boris B. Straumal

Monday July 3, 2017

19:00 Welcome party and registration in the Blue Hall ("Синий зал") of Mining Institute of MISiS, Leninskii prospect 6, main building, first floor.

All oral sessions will take place in the building, in the Conference Hall of Mining Institute of MISiS, Leninskii prospect 6, first floor. Poster sessions will take place at the entrance of MISiS Concert Hall (main building, Leninskii pr. 4a, 1st floor). Lunches and conference dinner will take place in the canteen of MISiS (main building, Leninskii pr. 4a, separate entrance)

Tuesday July 4, 2017

9:00-9:40 Opening ceremony, including introductory talks of
Prof. Boris Bokstein, Chair of DF VII, Head of the local organising committee
Prof. Hans Wiesmeth, Head of the Saxon Academy of Sciences
Prof. Jörg Kärger, DF VII Advisory Board

Diffusion of ideas and information

9:40-10:00 K. Prochazka, G. Vogl
Faculty of Physics, University of Vienna, Vienna, Austria
How to model language diffusion

10:00-10:20 H. Wiesmeth[1], S. Lösch[2], O. Okhrin[2]
[1]Ural Federal University, Ekaterinburg, Russia
[2]TU Dresden, Dresden, Germany
Diffusion of environmental awareness: experience from Russia

10:20-10:40 O. Kosenko
Saxon Academy of Sciences, Leipzig, Germany
Diffusion of immunological innovations in Russia at the turn of the 19th/20th century

10:40-11:40 Coffee break

11:40-12: 00 Z. Shavlokhova

Russian Presidential Academy of National Economy and Public Administration, Moscow
The diffusion of law or borrowing from foreign legal systems

Theory and calculations 1

12: 00-12:30 A.V. Neimark, A. Vishnyakov, M.-T. Lee
Department of Chemical and Biochemical Engineering, Rutgers, The State University of New Jersey, Piscataway NJ, USA
Multiscale modeling of water and proton diffusion in self-assembled polymer electrolyte membranes (invited)

12:30-12:40 *Conference photo at the entrance of MISiS Mining institute*

12:40-14:00 Lunch

14:00-14:20 N. Fatkullin[1], E.A. Roessler[2], M. Hofmann[2], A. Lozovoi[3], C. Mattea[3], S. Stapf [3]
[1]Institute of Physics, Kazan Federal University, Kazan, Russia
[2]University of Bayreuth, Dept. Experimentalphysik II, Bayreuth, Germany
[3]Technische Universität Ilmenau, Dept. Technical Physics II, Ilmenau, Germany
Recent advances in the study of high molecular mass polymer melts diffusion by proton NMR

EXMONAN workshop

14:20-14:40 P. Sowa[1], A. Biborski[2], M. Kozłowski[1], R. Kozubski[1], I.V. Belova[3], G.E. Murch[3]
[1]M. Smoluchowski Institute of Physics, Jagiellonian University in Krakow, Krakow, Poland
[2]AGH University of Science and Technology Academic Centre for Materials and Nanotechnology, Krakow, Poland
[3]Centre for Mass and Thermal Transport in Engineering Materials, School of Engineering, The University of Newcastle, Callaghan, Australia
Thermodynamic activation energy for self-diffusion and order-order relaxation in intermetallic compounds: atomistic model and Monte Carlo simulations

14:40-15: 00 C. Cancellieri, E. Klyatskina, M. Chiodi, V. Araullo-Peters, J. Janczak-Rusch, L.P.H. Jeurgens
EMPA, Swiss Federal Laboratories for Materials Science and Technology, Dübendorf, Switzerland
Phase stability and stress evolution of nano-multilayered coatings upon thermal treatment

15:00-16:20 Coffee break
EXMONAN closed session

16:20-16:40 M. Lavrskyi[1], H. Zapolsky[1], F. Danoix[1], A.G. Khachaturyan[2], G. Demange[1]

[1]Normandie University, INSA Rouen, CNRS, Groupe de Physique des Matériaux, Rouen, France
[2]Department of Materials Science & Engineering, Rutgers University, Piscataway, NJ, USA
Atomic Density Function approach to model the carbon kinetics in martensite

16:40-17:00 Z. Erdélyi[2], B. Gajdics, J.J. Tomán, G. Radnóczi[1], E. Bokányi[1], F. Misják[1]
[1]Research Centre for Energy Research, Hungarian Academy of Sciences, Budapest, Hungary
[2]Department of Solid State Physics, University of Debrecen, Debrecen, Hungary
Size dependent spinodal decomposition in Cu-Ag nanoparticles

17:00-17:20 Y.A. Khon[1], H. Zapolsky[2], P.P. Kaminsky[1], A.N. Ponomarev[1], E.A. Moldovanova[3]
[1]Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia
[2]Rouen University, Rouen, France
[3]National Research Tomsk Polytechnic University, Tomsk, Russia
Dynamical instabilities and mass transport in solids surfaces under external stress

17:20-17:40 J.J. Tomán[1], Z. Erdélyi[1], A.M. Gusak[2], M. Pasichnyy[2], V. Bezpalchuk[2], B. Gajdics[1]
[1]Department of Solid State Physics, University of Debrecen, Debrecen, Hungary
[2]Department of Physics, Cherkasy National University, Cherkasy 18031, Ukraine
Stochastic Kinetic Mean Field model - a new, low-cost, atomic scale simulation technique

17:40-18:30 Meeting of Diffusion-Fundamentals Editorial Board

Wednesday July 5, 2017

Diffusion in non-crystalline systems

9:00-9:30 D.V. Louzguine
WPI Advanced Institute for Materials Research, Tohoku University, Sendai, Japan
Diffusive phase transformations in metallic glasses (invited)

9:30-9:50 J. Janczak-Rusch, M. Chiodi, C. Cancellieri, V. Araullo-Peters, L.P.H. Jeurgens
Swiss Federal Laboratories for Materials Science and Technology, EMPA, Dübendorf, Switzerland
Exploring fast diffusion at the nano-scale for nanojoining technologies

9:50-10:10 G. Chacón-Acosta, M. Núñez-López, J.A. Santiago

Applied Mathematics and Systems Department, Universidad Autónoma Metroplolitana-Cuajiamalpa, Vasco de Quiroga 487, México City 05348, Mexico
Curvature effects on a phenomenological reaction-diffusion model of biodegradation

10:10-10:30 E. Klyatskina[1,2], C. Cancellieri[3], M. Chodi[3], L. Jeurgens[3], B. Straumal[1,4], J. Janczak-Rusch[3]
[1]Institute of Solid State Physics of the Russian Academy of Sciences, Chernogolovka, Russia
[2]Instituto de Tecnología de Materiales, Universitat Politècnica de València, Valencia, Spain
[3]I Empa, Swiss Federal Laboratories for Materials Science and Technology, Dübendorf, Switzerland
[4]NUST MISIS National University of Science and Technology MISiS, Moscow, Russia
Effect of Ge addition in the thermal stability and microstructure Ag/Ge/AlN nano-multilayer system

10:30-11:20 Coffee break

11:20-11:40 G.R. Majer
Max Planck Institute for Intelligent Systems, Heisenbergstr. 3, 70569 Stuttgart, Germany
Model-independent measurements of ATP diffusion in PEG-DA hydrogels with various mesh sizes

11:40-12:00 S. Mukhin, D. Makitruk, D. Gabdullin
NUST "MISIS", Moscow, Russia
Diffusive bending modes in bola lipid membrane of archaea

12:00-12: 20 B. Kheyfets,T. Galimzyanov, S. Mukhin
NUST "MISIS", Moscow, Russia
Lipids diffusion anomalies in bilayer membranes at main phase transition

12: 20-14:00 Lunch

Diffusion in heterogeneous systems

14:00-14:20 D.L. Beke
Department of Solid State Physics, University of Debrecen, Hungary
Atomistic interpretation of the interface transfer coefficients for interdiffusion in AB binary phase separating system (keynote)

14:20-14:40 V. Kuchi, P. Jardin
Grand Accélérateur National d'Ions Lourds, Bvd H. Becquerel, Caen, France
Grain size influence on the release of radioactive isotopes out of target materials made of powder

14:40-15:00 S.A.Kukushkin, A.V. Osipov

Institute of Problems in Mechanical Engineering, Bolshoy pr., 61, V.O., Saint-Petersburg, Russia, 199178
Drift mechanism of mass transfer on heterogeneous reaction in crystalline silicon substrate

15:00-15:20 A. Kosinova[1], B. Straumal[2,3], E. Rabkin[1]
[1]Department of Materials Science and Engineering, Technion – Israel Institute of Technology, Haifa, Israel
[2]Karlsruhe Institute of Technology, Institute of Nanotechnology, Eggenstein-Leopoldshafen, Germany
[3]Institute of Solid State Physics, Russian Academy of Sciences, Chernogolovka, Russia
Wetting of grain boundaries in ultrafine-grained copper by liquid bismuth

15:20-16:10 Coffee break

16:10-16:30 V.P. Filippova[1], A.M. Glezer[1,2], R.V. Sundeev[1,2], A.A. Tomchuk[1,3]
[1]I. P. Bardin Central Research Institute for Ferrous Metallurgy, Moscow, Russia
[2]National University of Science and Technology "MISiS", Moscow, Russia
[3]Bauman Moscow State Technical University, Moscow, Russia
Diffusion influencing on competition between the volume solution and the surface segregation of solved elements in α-Fe

16:30-16:50 V.A. Esin[1], D. Prokoshkina[2], S.V. Divinski[2]
[1]MINES ParisTech, PSL Research University, Centre des Matériaux, Evry, France
[2]Institute of Materials Physics, University of Münster, Münster, Germany
Experimental evidences for anomalous grain boundary diffusion of Fe in Cu and Cu-Fe alloys

16:50-17:20 G. Gottstein[1], L.S. Shvindlerman[1,2]
[1]Institut für Metallkunde und Metallphysik, RWTH Aachen, Aachen, Germany
[2]Institute of Solid State Physics, Russian Academy of Sciences, 142432 Chernogolovka, Russia
Grain boundary junctions and grain growth in nanocrystalline materials (keynote)

17:20-19:00 **Poster session.** At the entrance of MISiS Concert Hall (main building, Leninskii pr. 4a, 1st floor)

19:00 **Conference dinner (Canteen of MISiS)**

Thursday July 6, 2017

Theory and calculations 2

9:00-9:20 Y. Lanoiselée[1], D.S. Grebenkov[1,2]
[1]LPMC, CNRS - École Polytechnique, Palaiseau, France
[2]ISCP, CNRS - Independent University of Moscow, Moscow, Russia
Unravelling intermittent features in single particle trajectories by a local convex hull method

9:20-9:40 G.S. Zhdanov, M.S. Lozhkin
Saint Petersburg State University, St. Petersburg, Russia
Reconstruction of a focused e-beam profile in amorphous carbon using diffusion of n-alcane molecules along carbon nanopillar sidewalls

9:40-10:00 S.B. Yuste[1], E. Abad[2], F. Le Vot[1], C. Escudero[3]
[1]Universidad de Extremadura, Badajoz, Spain
[2]Universidad de Extremadura, Mérida, Spain
[3]Universidad Autónoma de Madrid, Madrid, Spain
A Chapman-Kolmogorov approach for diffusion in an expanding medium

10:00-10:20 L. Tupikina[1], D. Grebenkov[1,2]
[1]Laboratoire de Physique de la Matière Condensée, CNRS/Ecole Polytechnique, Palaiseau France
[2]Poncelet laboratory, CNRS/Moscow Independent University, Moscow, Russia
Analysis of diffusion in porous media using a porous graph approach

10:20-10:40 S.D. Traytak[1], D.S. Grebenkov[2,3]
[1]Semenov Institute of Chemical Physics of the Russian Academy of Sciences, Moscow, Russia
[2]Laboratoire de Physique de la Matière Condensée,CNRS -- Ecole Polytechnique, University Paris-Saclay, Palaiseau, France
[3]Interdisciplinary Scientific Center Poncelet (ISCP), CNRS – Independent University of Moscow, Moscow, Russia
Semi-analytical solutions of boundary value problems for the stationary diffusion equation in three-dimensional canonical domains

10:40-11:20 Coffee break

11:20-11:40 N.D. Kondratyuk[1,2] G.E. Norman[1,2], V.V. Stegailov[1,2]
[1]Joint Institute for High Temperature of RAS, Moscow, Russia
[2]Moscow Institute of Physics and Technology, Dolgoprudny, Russia
Self-consistent molecular dynamics calculation of diffusion in higher n-alkanes

11:40-12:00 D.S. Grebenkov[1,2]
[1] Laboratoire de Physique de la Matière Condensée,CNRS -- Ecole Polytechnique, University Paris-Saclay, Palaiseau, France
[2] Interdisciplinary Scientific Center Poncelet (ISCP), CNRS, Moscow, Russia
Universal formula for the mean first passage time in planar domains

12:00-12:20 V.N. Chuvil'deev[1], V.I. Kopylov[1,2]
[1]National Research Lobachevsky State University of Nizhny Novgorod, Nizhny Novgorod, Russia
[2]Physics and Technology Institute of National Academy of Science of Belarus, Minsk, Belarus
Theory of non-equilibrium grain boundaries and its applications for describing ultrafine-grained metals and alloys produced by ECAP

Diffusion in multiphase systems

12:20-12:40 W. Köhler, Th. Triller, M. Schraml, M. Gebhardt
Physikalisches Institut, Universität Bayreuth, 95440 Bayreuth, Germany
Non-isothermal diffusion in ternary systems: ground and microgravity experiments

12:40-14:00 Lunch

14:00-15:30 Poster session. At the entrance of MISiS Concert Hall (main building, Leninskii pr. 4a, 1st floor)

15:30-16:00 Coffee break

16:00-16:30 T. Hähnel[1], M. Klauck[1], C. Reichenbach[2], D. Klank[2], G. Kalies[1]
[1] HTW University of Applied Sciences, Dresden, Germany
[2] Quantachrome Deutschland GmbH, Odelzhausen, Leipzig, Germany
How to measure liquid-adsorption isotherms on porous solids?

16:30-16:50 C. Cserháti[1], G. Langer[1], Y. Iguchi[2], Zs. Czigány[3], Z. Erdélyi[1]
[1]University of Debrecen, Department of Solid State Physics, Debrecen, Hungary
[2]Hungarian Academy of Sciences Institute for Nuclear Research, Debrecen, Hungary
[3]Centre for Energy Research, Institute of Technical Physics and Materials Science
Kirkendall effect on the nanoscale

16:50-17:10 V.F. Degtyareva
Institute of Solid State Physics, Russian Academy of Sciences, Chernogolovka, Russia
Phase separation in binary alloys under temperature / pressure action: valence electron energy as origin

Friday July 7, 2017

9:00-9:20 A. Guskov
Institute of Solid State Physics, Russian Academy of Sciences, Chernogolovka, Russia
Spinodal decomposition of solutions during crystallization

9:20-9:40 V.V. Palacheva[1], A. Emdadi[1], F. Emeis[3], I.A. Bobrikov[2], S.V. Divinski[3], A.M. Balagurov[2], G. Wilde[3], I.S. Golovin[1]
[1] National University of Science and Technology "MISIS", Moscow, Russia
[2] Frank Laboratory of Neutron Physics, Joint Institute for Nuclear Research, Dubna, Russia
[3] Institute of Materials Physics, University of Munster, Münster, Germany
Diffusion-controlled phase transitions as a tool for tailoring Fe-Ga functional properties

9:40-10:00 A. Itckovich[1], M. Mendelev[2], A. Rodin[1], B. Bokstein[1]
[1]The National University of Science and Technology -"MISiS", Moscow, Russia
[2]Ames Laboratory. Ames, IA, USA
Computer simulation of atomic complexes formation in grain boundaries

10:00-10:20 A.V. Druzhinin[1], D.A. Podgornyy[1], A.B. Akinin[2], A.S. Bykov[1]
[1]National University of Science and Technology MISiS , Moscow, Russia
[2]Research Institute of Goznak, Moscow, Russian Federation
Influence of heat treatment on magnetic properties of Cu-Sn-Co-based materials produced by powder metallurgy

10:20-10:40 A.B. Straumal[1], A.A. Mazilkin[1,2], B.B. Straumal[1-3], B. Baretzky[2]
[1]Institute of Solid State Physics, Russian Academy of Sciences, Chernogolovka, Russia
[2]Karlsruher Institut für Technologie, Institut für Nanotechnologie, Eggenstein-Leopoldshafen, Germany
[3]National University of Science and Technology «MISIS», Moscow, Russia
Grain boundary pseudopartial wetting

10:40-11:20 Coffee break

11:20-11:40 S.N. Zhevnenko
National University of Science and Technology "MISIS", Moscow, Russia
Effect of the impurity on diffusion creep of dilute Cu-based solid solutions

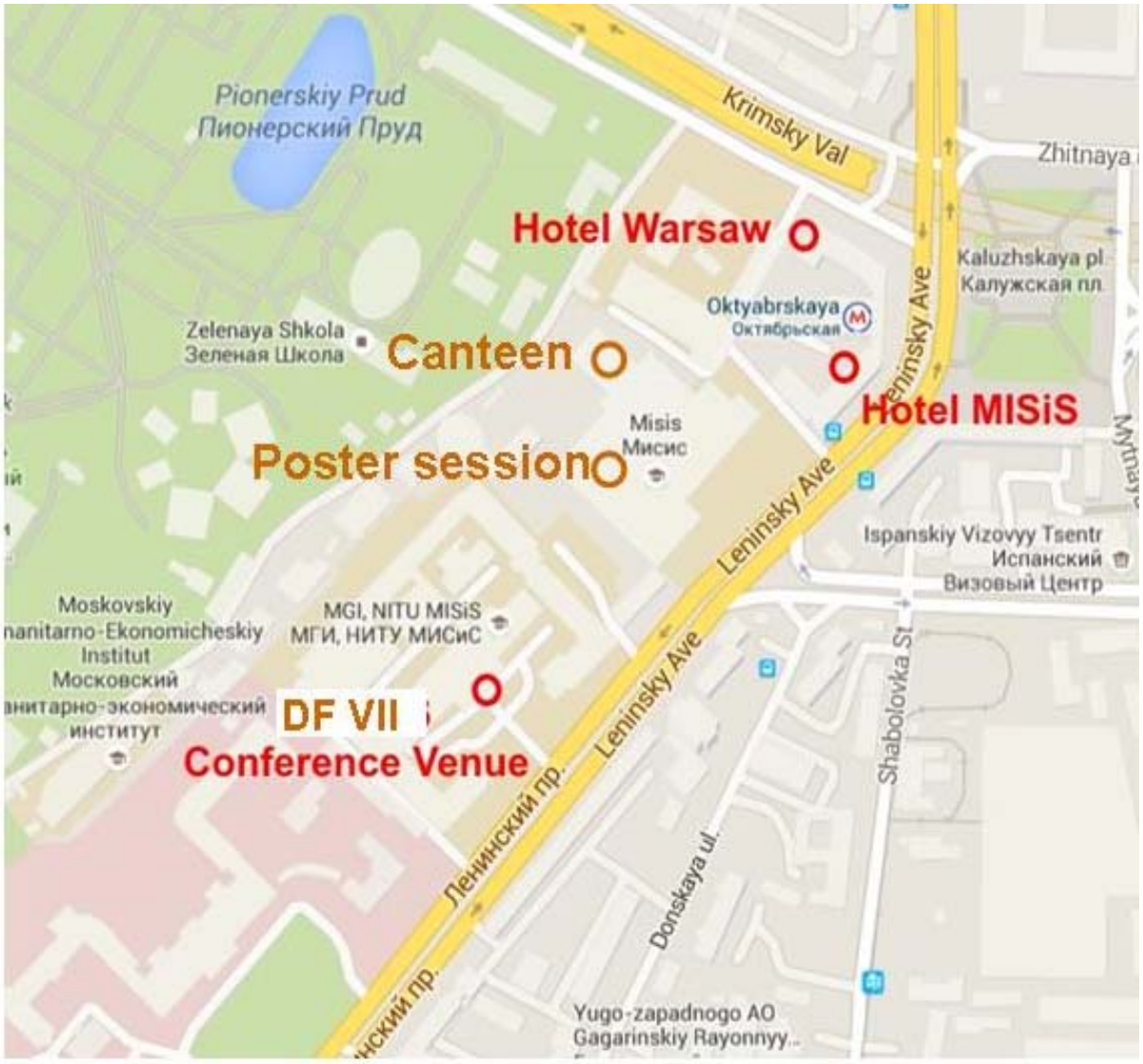
Methods of diffusion measurements

11:40-12:00 T.M. Koller, C. Giraudet, M.H. Rausch, A.P. Fröba
Department of Chemical and Biological Engineering (CBI)
and Erlangen Graduate School in Advanced Optical Technologies (SAOT),
Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU),
Paul-Gordan-Straße 6, D-91052 Erlangen, Germany
Dynamic Light Scattering (DLS) for the characterization of diffusion processes

12:00-12:20 W.S. Price[1], S.A. Willis[1], Y. Aihara[2]
[1]Nanoscale Organisation and Dynamics Group, Western Sydney University, Penrith, NSW, Australia
[2]Samsung R&D Institute Japan, Osaka, Japan
Towards accurate diffusion measurements of slowly diffusing species

12:20-13:00 Closing ceremony. Presentation of next Diffusion Fundamentls conference in 2019, in Erlangen, Germany (Prof. A.P. Fröba)

13:00-14:00 Lunch



Posters

(in the alphabetic order of the speakers)

Poster sessions will take place at the entrance of MISiS Concert Hall (main building, Leninskii pr. 4a, 1st floor).
Attention!!! Preferred poster size is A1 !!!

N.S. Afonikova, V.F. Degtyareva
Institute of Solid State Physics, Chernogolovka, Russia
Complex structures in the Au–Cd alloys: electron origin of diffusion ordering

E.B. Borisenko, N.N. Kolesnikov, D.N. Borisenko, A.N. Tereshchenko, A.V. Timonina
Institute of Solid State Physics, Russian Academy of Sciences, Chernogolovka, Russia
Precipitation and dissolution in melt-grown GaSe crystals doped with sulfur or rare-earth metals

V.N. Chuvil'deev, A.V.Semenycheva
National Research Lobachevsky State University of Nizhny Novgorod, Nizhny Novgorod, Russia
Model of grain boundary diffusion in titanium and zirconium α- and β-phases

V.N. Chuvil'deev, E.S. Smirnova
National Research Lobachevsky State University of Nizhny Novgorod, Nizhny Novgorod, Russia
Phenomenological theory of diffusion in metal oxides and ceramics

A.V. Druzhinin[1], D.A. Podgornyy[1], A.B. Akinin[2], A.S. Bykov[1]
[1]National University of Science and Technology MISiS , Moscow, Russian Federation
[2]Research Institute of Goznak, Moscow, Russian Federation
Influence of heat treatment on magnetic properties of Cu-Sn-Co-based materials produced by powder metallurgy

K.S. Fidanyan[1,2], V.V. Stegailov[1,2]
[1]Joint Institute for High Temperature of RAS, Moscow, Russia
[2]Moscow Institute of Physics and Technology, Dolgoprudny, Russia
Calculation of the vacancy diffusion rate: beyond the NEB precision

V.P. Filippova, A.M. Glezer, R.V. Sundeev, A.A. Tomchuk
[1]I. P. Bardin Central Research Institute for Ferrous Metallurgy, Moscow, Russia
[2]National University of Science and Technology "MISiS", Moscow, Russia
[3]Bauman Moscow State Technical University, Moscow, Russia
Diffusion influencing on competition between the volume solution and the surface segregation of solved elements in α-Fe

M.E. Foulaadvand[1], B. Aghaei[1], A. Saeidi[1], G. Volpe[2]
[1]Department of Physics, University of Zanjan, Zanjan, Iran
[2]Department of Physics, University of Gutenberg, Gutenberg, Sweden
Driven mixture of active/passive colloids in a constricted geometry

N. Fulik[1], F. Hippauf[2], D. Leistenschneider[2], E. Zhang[2], L. Borchardt[2], S. Paasch[1], S. Kaskel[2], E. Brunner[1]
[1] Technische Universität Dresden, Institute of Bioanalytical Chemistry, Dresden, Germany
[2] Technische Universität Dresden, Institute of Inorganic Chemistry I, Dresden, Germany
Ion mobility studies in model carbons by solid state MAS- and *In-Situ*-NMR spectroscopy

C. Giraudet, T. Klein, M.H. Rausch, T.M. Koller, A.P. Fröba
Department of Chemical and Biological Engineering (CBI) and Erlangen Graduate School in Advanced Optical Technologies (SAOT), Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Paul-Gordan-Straße 6, D-91052 Erlangen, Germany
Mass diffusivities of binary mixtures of normal alcanes with dissolved gases

T. Hähnel[1], S. Frenzel[1], J. Möllmer[2], C. Reichenbach[3], G. Kalies[1]
[1] HTW University of Applied Sciences, Dresden, Germany
[2] INC Institut für Nichtklassische Chemie e.V., Leipzig, Germany
[3] Quantachrome GmbH & Co. KG, Odelzhausen, Germany
Immersion enthalpies and adsorption isotherms of liquids on carbon molecular sieves

S. Hwang[1], C. Chmelik[1], J. Haase[1], L. Prager[2], B. Seoane[3], J. Gascon[3] and J. Kärger[1]
[1] University of Leipzig, Leipzig, Germany
[2] Leibniz Institute of Surface Modification, Leipzig, Germany
[3] Delft University of Technology, Delft, The Netherlands
Transport diffusion of CO_2 in mixed matrix membranes

A. Khayrullin, S.N. Zhevnenko, A.O. Rodin
National University of Science and Technology “MISIS”, Leninsky pr. 4, 119049 Moscow, Russia
Pecularities of diffusion in Cu-Fe and Co–Cu alloys

Ph.V. Kiryukhantsev-Korneev, K.A. Kuptsov, T.B. Sagalova, N.V. Shvindina, A.V. Bondarev
National University of Science and Technology “MISIS”, Moscow, Russia
Diffusion-barrier properties and thermal stability of TiAlSiCN, TiAlSiCN/SiBCN, and TiAlSiCN/AlOx films

O.A. Kogtenkova, B.B. Straumal
Institute of Solid State Physics Russian Academy of Sciences, Chernogolovka, Russia
Grain boundary wetting in the Al–Zn and Al–Mg alloys

O.A. Kogtenkova, B.B. Straumal
Institute of Solid State Physics Russian Academy of Sciences, Chernogolovka, Russia
The complete and incomplete grain boundary wetting in the Cu–Co alloys

A. Kustov[1], I. Migel[2]
[1]Voronezh State Pedagogical University, Voronezh, Russia
[2]N. E Zhukovsky and Y.A. Gagarin Military Educational and Scientific Center of the Air Force Academy,Voronezh, Russia
Study using acoustic waves state of metal alloys after diffusion influences with the aim of predicting their behavior

V. Zelenev[1], A. Kustov[1], I. Migel[2]

[1]Voronezh State Pedagogical University, Voronezh, Russia
[2]N. E Zhukovsky and Y.A. Gagarin Military Educational and Scientific Center of the Air Force Academy,Voronezh, Russia
The determination of the physical parameters of the subsurface layers of solid materials using AMD-methods

E. Laurenz[1,2] Füldner[1], L. Schnabel[1], G. Schmitz[2]
[1]Fraunhofer Institute for Solar Energy Systems ISE, Freiburg, Germany
[2]Hamburg University of Technology, Hamburg, Germany
Application of frequency response methods for measuring heat and mass transfer in sorption materials for heat transformation

M.N. Magomedov
Institute for Geothermal Research, Dagestan Scientific Centre RAS, Makhachkala, Russia
The dependencies of self-diffusion coefficient on the size and shape of the nanocrystal at different *P*-*T*-conditions

Y.S. Nechaev
I.P. Bardin Central Research Institute for Ferrous Metallurgy, G.V. Kurdyumov Institute of Metals Science & Physics, Moscow, Russia
On the liquid-like local state in deformed metallic materials, relevance to physics of the diffusion and other anomalies

Y.S. Nechaev
I.P. Bardin Central Research Institute for Ferrous Metallurgy, G.V. Kurdyumov Institute of Metals Science & Physics, Moscow, Russia
The compound-like nanosegregation at dislocations and grain boundaries in metallic materials, relevance to physics of the diffusion anomalies

Y.S. Nechaev
I.P. Bardin Central Research Institute for Ferrous Metallurgy, G.V. Kurdyumov Institute of Metals Science & Physics, Moscow, Russia
Atomic mechanisms and characteristics of diffusion, sorption and intercalation of hydrogen in nanographite and graphene structures

V. Nikulkina, B. Bokstein, A. Rodin
Department of Physical Chemistry, National University of Science and Technology – "MISiS", Moscow, Russia
Study of bulk and grain boundary diffusion Sn in Cu

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Effect of local chemical composition of grain boundaries on corrosive resistance and mechanical properties of ultrafine-grained titanium alloys

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Abnormal strengthening effect after annealing of ultrafine-grained metals produced by ECAP

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Effect of mechanical activation on optimal sintering temperature of ultrafine-grained tungsten heavy alloys

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Magnetoplastic effect in Cu-Be alloys

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A model for language dynamics in Carinthia, Austria

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Estimation of line tension of individual dislocations from the thermal motion trajectories of inclusions attached to them

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Formation of intermediate phases and supersaturated solid solution in Al-Cu system during diffusion

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X-rays diffuse scattering by water and amorphous ices

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Role of boundaries during wetting and diffusion interaction of heterogeneous metals

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Investigation of time-temperature relationships of surface segregations forming under internal adsorption of solved elements in α-Fe alloys, using Auger-spectroscopy

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Grain Boundary Engineering in polycrystalline materials

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International scientific cooperation as a mechanism for diffusion of competences in the field of advanced manufacturing technologies

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Transport of methyl Oleate in hierarchically structured titaniumsilicalite-1 catalysts probed by means of diffusion NMR