Mishchenko Andrey, Ph.D., Dr.Hab.

CURRICULUM VITAE

ADDRESS: 2-5-41 Ninomiya, Tsukuba-shi, Ibaraki, 305-0051, Japan
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E-mail: andrey.mishchenko6363@gmail.com
Identifier: ResearcherID: A-1286-2010, ORCID: 0000-0002-7626-7567

PERSONAL: born: May 11, 1963, Uzhgorod, UKRAINE, USSR
Marital status: Married, 5 children
LANGUAGES: Ukrainian (native), Russian (native), English (fluent),
Czech (reading), Slovakian (reading), Japanese (conversation)

PUBLICATIONS AND CONFERENCE TALKS:

Peer reviewed publications: 110,
H-index: 34,
5-years H-index since 2018: 23,
Invited talks on conferences > 30, oral talks on conferences > 40.

HIGHER EDUCATION:

2006	Russian Research Center "Kurchatov Institute", Moscow, Russia, *Dr.Hab.*
1991	Russian Research Center "Kurchatov Institute", Moscow, Russia, *Ph.D.*
1987-1991	Russian Research Center "Kurchatov Institute", Moscow, Russia, *Ph.D.*
1980-1987	Uzhhorod state Univeristy (Uzhhorod, Ukraine) and Moscow Engineering Physics Institute, MEPhI (Moscow, Russia) *M.Sc.*

EMPLOYMENT:

2023-now	Research Consultant, CEMS, RIKEN, Japan
2023-2023	Professor, Univerity of Vienna, Austria
2013-2023	Senior Research Scientist, CEMS, RIKEN, Japan
2008-2013	Research Scientist, CMRG, RIKEN, Japan
2003-2008	Researcher, Japan Science and Technology Agency (JST)
2001-2003	Senior Researcher, Correlated Electron Research Center, AIST, Tsukuba
2000–2001	Researcher, Correlated Electron Research Center, AIST, Tsukuba
1999-2000	Associated professor in Moscow Institute of Physics and Technology (MIPT)
1996-1999	Assistant professor in Moscow Institute of Physics and Technology (MIPT)
1995–2000	Senior Researcher, Russian Research Center "Kurchatov Institute"
1993–1994	Researcher, Russian Research Center "Kurchatov Institute"
1990–1993	Assistant, Russian Research Center "Kurchatov Institute"

AWARDS:

2020 CEMS RIKEN Silver Medal Award for exemplary results in "Development of exact theoretical methods capable of predicting properties of realistic materials: Diagrammatic Monte Carlo and Analytic Continuation approaches".

RESEARCH INTERESTS:

Electronic theory of highly correlated systems, electron-phonon interaction, ferroelectrics, high temperature superconductivity, spintronics. Methods of Monte Carlo simulations, algorithms of Feynman diagrams summation, methods of applied mathematics for "ill-posed" analytic continuation problems, .

TEACHING EXPERIENCE: supervising 2 master's theses and 3 doctoral dissertations, 6.5 years of professorship, 4 lecture courses as invited lecturer

1993-1997 Supervising **master's thesis and doctoral dissertation** in the Moscow Physical-Engineering Institute (MIPI): O.B. Maksimenko. Published papers:
1. O.B. Maksimenko and A.S. Mishchenko, On the pseudo-Jahn-Teller nature of the IV-VI compounds phonon spectra anomalies, Solid State Comm., **92**, 797 (1994)
2. O.B. Maksimenko and A.S. Mishchenko, On the Nature of the Phonon Dispersion Relation Anomalies of IV-VI Compounds, J. Phys.: Condens. Matter, **9**, 5561 (1997)
3. O.B. Maksimenko and A.S. Mishchenko, Pseudo-Jahn-Teller Origin of Phonon Anomalies in IV-VI Compounds, Crystallography Reports, **42**, 547 (1997)

1999-2001 Supervising **master's thesis** in the Moscow Institute of Physics and Technology (MIPT): E.A. Burovski. Published papers:
1. E.A. Burovski, A.S. Mishchenko, N.V. Prokof'ev and B.V. Svistunov, Diagrammatic Quantum Monte Carlo for Two-Body Problems: Applied to Excitons, Phys. Rev. Lett., **87**, 186402 (2001)

1996-1999 **Assistant professor** in Theoretical Department of Moscow Institute of Physics and Technology (MIPT). Teaching courses: (i) The Classical Theory of Fields; (ii) Quantum Mechanics: Non-Relativistic Theory; (iii) Thermodynamics; (iv) Statistical Physics

1999-2000 **Associate professor** in Theoretical Department of Moscow Institute of Physics and Technology (MIPT). Teaching courses: (i) Thermodynamics; (ii) Statistical Physics

2005 **Lecture course** "Polarons by exact Diagrammatic Monte Carlo and Analytic continuation methods", International School of Physics "Enrico Fermi", Varenna, Italy

2006 **Lecture course** "Diagrammatic Monte Carlo and Stochastic Optimization Methods for Complex Composite Objects in Macroscopic Baths", International Summer school on Computational Many-Particle Physics, Greifwald, Germany

2010 **Lecture course** "Diagrammatic Monte Carlo and Analytic continuation" for post graduate students funded by "European professors mobility program", Universitat Politecnica de Catalunya (UPC), Barcelona, Spain

2012 **Lecture** "Analytic continuation", Autumn school "Correlated Electrons: From Models to Materials", Jülich, Germany

2019- Supervising **doctoral dissertation** in the University of Vienna: T. Hahn. Published papers:
1. T. Hahn, N. Nagaosa, C. Franchini, and A.S. Mishchenko, Diagrammatic quantum Monte Carlo study of an acoustic lattice polaron, Phys. Rev. B **104**, L161111 (2021)
2. S. Ragni, T. Hahn, Z. Zhang, N. Prokof'ev, A. Kuklov, S. Klimin, M. Houtput, B. Svistunov, J. Tempere, N. Nagaosa, C. Franchini, A.S. Mishchenko, Polaron with quadratic electron-phonon interaction, Phys. Rev. B **107**, L121109 (2023)

2022- Supervising **doctoral dissertation** in the University of Vienna: S. Ragni. Published papers:
2. S. Ragni, T. Hahn, Z. Zhang, N. Prokof'ev, A. Kuklov, S. Klimin, M. Houtput, B. Svistunov, J. Tempere, N. Nagaosa, C. Franchini, A.S. Mishchenko, Polaron with quadratic electron-phonon interaction, Phys. Rev. B **107**, L121109 (2023)

2023 **Visiting Professor lecture course for postgraduate and Ph.D. students:** "Feynman Diagrams empowered by Monte Carlo", University of Vienna, Vienna, Austria

POPULARIZATION OF PHYSICS: in *nanowerk*

(*nanowerk* is the nanotechnology popularization network having social media accounts on Twitter, Facebook, Pinterest, LinkedIn and Youtube offer a daily summary of the latest nanotechnology news)

Novel numerical technique permits studying the interaction between elementary particles without approximations,
nanowerk: https://www.nanowerk.com/news/newsid=8915.php, (2009) - based on *E. Burovski, H. Fehske, and A.S. Mishchenko*: Exact treatment of exciton-polaron formation by Diagrammatic Monte Carlo Method, Phys. Rev. Lett., **101**, 116403 (2008)

Electrons take a phonon bath,
nanowerk: https://www.nanowerk.com/nanotechnology-news/newsid=41163.php, (2015) - based on *A. S. Mishchenko, N. Nagaosa, G. De Filippis, A. de Candia, and V. Cataudella*: Mobility of Holstein Polaron at Finite Temperature: an Unbiased Approach, Phys. Rev. Lett. **114**, 146401 (2015).

REGISTERD REVIEWER IN THE FOLLOWING JOURNALS:

1. Physical Review Letters, multiple reviewer
2. Physical Review B, multiple reviewer
3. Physical Review E
4. Physical Review Materials
5. Physical Review Research
6. Nature Physics
7. Nature Communications, multiple reviewer
8. Communications Physics
9. Europhysics Letters (EPL), multiple reviewer

PRINCIPAL IN GRANTS:

1995-1997	Principal investigator for grant for young group leaders "Lattice dynamics of mixed valence and ferroelectric materials", "Kurchatov Institute"
1995	Principal beneficiary of the visiting professor grant DFG No. 436 RUS 17/19/95, TU Dresden, Germany
1997-2000	Principal investigator for grant for young group leaders "Magnetic neutron scattering on pure heavy fermion materials and systems with crystal fields splitting interacting with electronic and elastic degrees of freedom", "Kurchatov Institute"
2008-2009	Principal investigator from Japanese side of Executive Program of Cooperation in the Field of Science and Technology between the Government of Italy and Government of Japan, RIKEN and University of Naples Federico II
2010	Principal beneficiary of grant "Professors mobility program" from Ministry of Education of Spain for lecture course in Universitat Politecnica de Catalunya, Barcelona, Spain

PARTICIPATED IN GRANTS:

1993-1997	2 grants of the Dutch Organization for Scientific Research: NWO-07-03-002, NWO-07-30-002
1994-2001	3 grants of the International Association for the Promotion of Cooperation with scientists of Eastern Europe: INTAS-93-2834, INTAS-93-2834-ext, INTAS-97-2124
2000-2003	Grant-in-Aid for COE research from the Ministry of Education, Science, Culture and Sports of Japan
2007-2009	Grant-in-Aids under the Grant Nos. 15104006, 16076205, and 17105002 and NAREGI Nanoscience Project from the Ministry of Education, Culture, Sports, Science, and Technology, Japan
2015-2018	ImPACT Program of the Council for Science, Technology and Innovation (Cabinet Office, Government of Japan)
2019-2023	JST CREST Grant Number JPMJCR1874, Japan

AROUND 100 SEMINARS IN SCIENTIFIC INSTITUTIONS. SELECTED SEMINARS FOR LAST 10 YEARS:

2023 "Diagrammatic Monte Carlo method: Feynman diagrams (empowered by Monte Carlo)", University of Vienna, Vienna, Austria

2022 "Further development of the precision many-body methods: from simple examples to essentially many-body interactions", Institute of Physics, Zagreb, Croatia

2021 "Analytic continuation. New philosophy: well-posed questions for ill-posed problem", Simonz Foundation Flatiron Institute, New York, USA

2020 "Precision many-body method of Diagrammatic Monte Carlo: few easy steps from the simplest tutorial examples to fundamental problems", University of Vienna, Vienna, Austria

2020 "Fermi blockade of the electron-phonon interaction by finite density of fermions: application to cuprates", University of Naples Federico II, Naples, Italy

2020 "Development of exact theoretical methods capable of predicting properties of realistic materials: Diagrammatic Monte Carlo and Analytic Continuation approaches",RIKEN, CEMS Award seminar, Wako, Japan

2019 "Analytic continuation. New philosophy: well-posed questions for ill-posed problem", , University of Vienna, Vienna, Austria

2019 "Further development of the precision many-body methods for the studies of the physics of high Tc superconductors, chiral magnets, anomalous Hall effect, etcAnalytic continuation. New philosophy: well-posed questions for ill-posed problem", The University of Tokyo, Tokyo, Japan

2018 "Getting maximum from Monte Carlo data: Analytic continuation SOCC method", Uppsala Univerisy, Uppsala, Sweden

2018 "Further development of the precision many-body methods for studies of the physics of high Tc superconductors, chiral magnets, and anomalous Hall effect", Headquarters of Japan Science and Technology Agency, Tokyo, Japan

2018 "Stochastic Method of Numeric Analytic Continuation", Institute of Physics, Zagreb, Croatia

2017 "Evidences for significant electron-phonon coupling in high Tc cuprates: Fermi blockade of the coupling with doping", Osaka University, Osaka, Japan

2016 "Bold Diagrammatic Monte Carlo method and unbiased analytic continuation to get unbiased solution for many-particle problems", Quantum Hadron Physics Laboratory, Saitama, Japan

2016 "Unbiased methods for many-body problems", University of Naples Federico II, Naples, Italy

2016 "Studies of mobility and defects in organic semiconductors", University of Antwerp, Antwerp, Belgium

2016 "ARPES and optical conductivity of the Hubbard model with electron-boson coupling: equilibrium and pump-probe phenomena", Paul Scherrer Institut (PSI), Villigen, Switzerland

2015 "Polarons: from theoretical concept to technology of electronic devices", Hefei Institute of Physical Sciences, Hefei, China

2015 "Distribution of Localized States from Fine Analysis of Electron Spin Resonance Spectra in Organic Transistors", University of Massachusetts, Amherst, USA

2014 "General Concept of Polaron and its Manifestations in Transport and Spectral Properties", Aspen center for physics, Aspen, USA

Seminars before 2014 in: (1) University of Groningen, Netherlands; (2) University of Amsterdam, Netherlands; (3) University of Dresden, Germany; (4) RWTH Aachen University, Aachen, Germany; (5) Unversity of Antwerp, Antwerp, Belgium; (6) Charles University Prague, Prague, Czech Republic; (7) University of Naples Federico II, Naples, Italy; (8) The University of British Columbia, Vancouver, Canada; (9) Simon Fraser University, Burnaby, Canada; (10) University of Barcelona, Barcelona, Spain; (11) University of California, Santa Barbara, USA, etc. ...

PARTICIPATION IN INTERNATIONAL SCIENTIFIC EVENTS:

2022 From Solid State to Byophysics X, Cavtat (Croatia) (*invited talk)*

2021 Tackling the real-time challenge in strongly correlated systems: spectral properties from Euclidean path integrals, Online workshop of European Centre for Theoretical Studies in Nuclear Physics and Related Areas (ECT), Trento, (Italy) (*invited talk)*

2020 4th International Conference on Computer Simulations in Physics and beyond, Moscow, Russia, (*invited talk)*

2019 March Meeting of Americam Physical Society, Boston, USA, (*oral talk)*

2018 Mini-Symposium Theoretical and Computational Studies of Strongly Correlated Electron Systems, Uppsala, Sweden, *(invited talk)*

2018 International conference "From Solid State to Biophysics IX", Cavtat, Croatia *(invited talk)*

2018 International Winter School of Theoretical Physicists "Kourovka-37", Ekaterinburg, Russia *(invited lecture)*

2017 International Workshop on Strong Correlations and Angle-Resolved photoemission Spectroscopy (CORPES17), Hiroshima, Japan *(oral talk)*

2016 Workshop "Quantum Dynamics: From Algorithms to Applications", Greifswald, Germany *(oral talk)*

2014 KITP Workshop "Precision Many-Body Physics of Strongly Correlated Quantum Matter", Beijing, China *(oral talk)*

2013 International conference "International Workshop on Strong Correlations and Angle-Resolved Photoemission Spectroscopy", Hamburg, Germany *(oral talk)*

2013 International conference "The New Generation in Strongly Correlated Electron Systems 2013", Sestri Levante, Italy *(session chair)*

2012 Autumn school "Correlated Electrons: From Models to Materials", Jülich, Germany *(main lecturer)*

2010 International workshoqp on Emerging Trends in Advanced Correlated Materials, Capri island, Italy *(invited talk)*

2010 Meeting of The Physical Society of Japan, Okayama, Japan *(invited talk)*

2009 RIKEN Symposium on Quantum Effects in Condensed Matter Physics, Wako, Japan *(invited talk)*

2009 ISSP International Workshop on Physics and New Phenomena of π-electronic Interfaces, Kashiwa, Japan (*invited talk)*

2009 CORPES09: International Workshop on Strong Correlations and Angle-Resolved Photoemission Spectroscopy, Zurich, Switzerland (*oral talk)*

2009 GCOE Workshop on high temperature suoerconductors, Tokyo, Japan (*invited talk)*

2008 ICC-IMR Workshop, Sendai, Japan (*invited talk*)

2008 Stripes 2008, Erice, Italy (*invited talk*)

2008 Solid state theory conference dedficated to 80-th anniversary of Yu. Kagan, Moscow, Russia (*invited talk*)

2007 KITP Workshop on Moments and Multiplets in Mott Materials, Santa Barbara, USA (*invited talk*)

2007 Spectrocopy of Novel Superconductors, SNS2007, Sendai, Japan

2007 CREST Workshop on Charge Dynamics in High Temperature Superconductors, Tokyo, Japan (*invited talk*)

2006 International Summer school on Computational Many-Particle Physics, Greifwald, Germany (*invited talk, main lecturer*)

2006 27th muSR seminar, St. Petersburs, Russia (*invited talk*)

2006 Winter School on the Physics of Semiconductors, St. Petersburs, Russia (*invited talk*)

2005 International School of Physics "Enrico Fermi", Varenna, Italy (*invited talk, main lecturer*)

2005 International Seminar: Strong Correlations and ARPES, Recent Progress in Theory and Experiment, Dresden, Germany (*invited talk*)

2005 March Meeting of the American Physical Society, Los Angeles, USA (*invited talk*)

2005 Electron-Phonon Interaction in High Tc Superconductors, Tsukuba, Japan (*invited talk*)

2004 Spectroscopies in Novel Superconductros, Sitges, Spain

2004 New Trends in Science and Technology of Quantum Functional Oxides, Tsukuba, Japan (*oral prsentation*)

2004 March Meeting of the American Physical Society, Montreal, Canada (*oral prsentation*)

2003 Electron-Phonon Interaction in High Tc Superconductors, Revisited, Tsukuba, Japan (*invited talk*)

2003 CERC/ERATO-SSS Workshop on Phase Control of Correlated Electron Systems, Hawaii, USA

2003 SEXC4 Workshop on Excited States Theories, Tsukuba, Japan (*invited talk)*

2002 KITP International Workshop on Realistic Theories of Correlated Electron Materials, Santa Barbara, USA (*invited talk*)

2002 The 23rd International Conference on Low Low Temperature Physics, Hiroshima, Japan

2002 5^{th} International Conference on Excitonic Processes in Condensed Matter, Darwin, Australia (*invited talk*)

2002 CERC-ERATO Workshop: Phase control of correlated Electron Systems, Hawaii Island, USA (*oral presentation*)

2001 International Workshop on Materials Simulations, Shonan, Japan (*invited talk*)

2001 Todai International Symposium Correlated Electrons, Kashiwa, Japan

2001 JRCAT-CERC Workshop Phase Control of Correlated Electron Systems, Maui Island, Hawaii, USA (*oral presentation*)

2000 International Conference on Excitonic Properties in Condensed Matter, Osaka, Japan (*oral presentation*)

1999 International μ-SR seminar, St. Petersburg, Russia (*invited talk*)

1997 International Conference "Problems of Condensed Matter Physics", Moscow, Russia

1997 International μ-SR seminar, St. Petersburg, Russia (*invited talk*)

1996 1st European Conference on Neutron Scattering, Interlaken, Switzerland

1996 3^{rd} Prague Colloquium on f-Electron Systems, Prague, Czech Republic (*invited talk*)

1995 Bilateral French-Russian seminar on Strongly Correlated Electron Systems, Grenoble, France (*invited talk*)

1994 XII International Congress om Magnetism ICM'94 Warsaw, Poland

1993 XII workshop on Application of Neutron Scattering to the Solid State Physics, Zarechny, Russia (*invited talk*)

INVITED VISITS:

1993, 1994, 1995, 1996, 1997	Van der Vaals-Zeeman Lab. Amsterdam University, Amsterdam, The Netherlands, Prof. J.Franse
1993, 1994, 1995, 1996, 1997	RWTH, Aachen, Germany, Prof. G.Güntherodt
1994, 1995	Laboratoire Léon Brillouin (CEA-CNRS), Saclay, France, Dr. J.-M.Mignot
1995	MPG "Electronic Systems", Technical University, Dresden, Germany, Prof. H.Eschrig
1996	Charles University, Prague, Czech Republic, Prof. V. Sechovsky
1998, 1999	Department of Applied Physics, University of Tokyo, Tokyo, Japan, Prof. N.Nagaosa
2000	Institute for Theoretical Solid State Physics [TFVS-UA], Antwerpen, Belgium, Prof. J. T. Devreese
2002, 2013, 2015, 2017, 2018, 2019	Deaprtment of Physics, University of Massachusetts, Amherst, USA, Prof. N.V.Prokof'ev
2005, 2006, 2009, 2010, 2012, 2013, 2015, 2016, 2020	Universita di Napoli Federico II, Napoli, Italy, Prof. V. Cataudella
2009	University of Würzburg, Germany, Prof. F. Assaad
2009, 2016	University of Greifswald, Germany, Prof. H. Fehske
2010, 2011	Universitat Politecnica de Catalunya, Barcelona, Spain, Prof. J. Boronat
2011	University of British Columbia, Vancouver, Canada, Prof. M. Berciu
2013	RWTH, Aachen, Germany, Prof. Stefan Wessel
2016	Institute for Theoretical Solid State Physics [TFVS-UA], Antwerpen, Belgium, Prof. Jacques Tempere
2014, 2018, 2022	Institute of Physics, Zagreb, Croatia, Dr. Osor Barišić
2015	University of Science and Technology of China, Hefei, China, Prof. Youjin Deng
2016, 2018	University of Uppsala, Uppsala, Sweden, Prof. Olle Eriksson
2019, 2020,2023	University of Vienna, Vienna, Austria, Prof. Cesare Franchini

PUBLICATIONS: 110.

PAPERS : 100, REVIEWS: 4, CONTRIBUTIONS TO BOOK: 6

LIST OF PUBLICATIONS

1. *K.A. Kikoin and A.S. Mishchenko*: Electron-phonon interaction in systems with unstable valency, Sov. Phys. – JETP **67**, 2309–2317 (1988)
2. *P.A. Alekseev, A.S. Ivanov, B. Dorner, H. Schober, K.A. Kikoin, A.S. Mishchenko, V.N. Lazukov, E.S. Konovalova, Y.B. Paderno, A.Yu. Rumiantsev and I.P. Sadikov*: Lattice dynamics of intermediate valence semiconductor SmB_6, Europhys. Letters, **10**, 457–463 (1989)
3. *K.A. Kikoin and A.S. Mishchenko*: Deformable shell model description for the phonon spectra of semiconductors with unstable valence, J. Phys.; Condens Matt. **2**, 6491–6506 (1990)
4. *A.S. Mishchenko and K.A.Kikoin*: Lattice dynamics of rare-earth semiconductors with unstable valence, J. Phys.; Condens Matt. **3**, 5937–5954 (1991)
5. *A.S. Mishchenko*: The effect of closeness to a structural transition on the lattice dynamics of IV-IV cubic compounds, J. Moscow. Phys. Soc. **1**, 407–423 (1991)
6. *K.A.Kikoin and A.S. Mishchenko*: Electron-phonon interaction in semiconductors with unstable valence, Int. J. Mod. Phys. B **7**, 193–196 (1993)
7. *K.A. Kikoin and A.S. Mishchenko*: Resonance states in vibrational spectra of mixed valence semiconductors, JETP **77**, 828–840 (1993)
8. *K.A. Kikoin, M.N. Kiselev and A.S. Mishchenko*: On the stabilisation mechanism of spin liquid in the Kondo lattice, JETP Lett. **60**, 600–605 (1994)
9. *O.B. Maksimenko and A.S. Mishchenko*: On the pseudo-Jahn-Teller nature of the IV-VI compounds phonon spectra anomalies, Solid State Comm., **92**, 797–802 (1994)
10. *K.A.Kikoin and A.S. Mishchenko*: Magnetic excitations in intermediate valence semiconductors with singlet ground state, J. Phys.; Condens Matt. **7**, 307–313 (1995)
11. *K.A. Kikoin, M.N. Kiselev and A.S. Mishchenko*: On the spin origin of heavy fermions in rare-earth intermetallides, Physica B, **206&207**, 129–131 (1995)
12. *P. Lemmens, A. Hoffmann, A.S. Mishchenko, M.Yu. Talantov and G. Güntherodt*: Raman scattering of extra vibrational modes in mixed-valence compounds SmB_6 and Sm(Y)S, Physica B, **206&207**, 371–373 (1995)
13. *W. Bührer, P.A. Alekseev, V.N. Lazukov, K.A. Kikoin, A.S. Mishchenko, I.P. Sadikov and R. Hempelmann*: Phonon anomalies in the intermediate-valence compound $Ce_{0.9}Pr_{0.1}Ni_5$, Solid State Comm. **94**, 329–334 (1995)
14. *K.A. Kikoin and A.S. Mishchenko*: Magnetic excitations in intermediate valence semiconductors with singlet ground state, J. Magn. Magn. Mater. **140-144**, 2167–2168 (1995)
15. *K.A. Kikoin, M.N.Kiselev and A.S. Mishchenko*: Elementary excitations in Kondo-Systems CeNiSn and CeRhSb, Czech. J. Phys., **46**, Suppl. S4, 1899–1900 (1996)
16. *Yu. Kagan, K.A. Kikoin and A.S. Mishchenko*: Interplay between heavy fermions and crystal-field excitations in Kondo lattices: Low-temperature thermodynamics and inelastic neutron scattering spectra of CeNiSn., Phys. Rev. B., **55**, 12348-12362 (1997)
17. *K.A. Kikoin, M.N. Kiselev and A.S. Mishchenko*: Stabilization of spin liquid in Kondo lattice. High temperature regime., Physica B, **230&232**, 490–492 (1997)
18. *Yu.Kagan, K.A.Kikoin and A.S. Mishchenko*: On the influence of soft crystal field excitations on the spectrum of spin excitations in CeNiSn type Kondo lattices., Physica B, **230&232**, 680–682 (1997)
19. *O.B.Maksimenko and A.S. Mishchenko*: On the Nature of the Phonon Dispersion Relation Anomalies of IV-VI Compounds., J. Phys.: Condens. Matter, **9**, 5561-5574 (1997)

20. *R. Schumann, A. Mishchenko and M. Richter*: Self-interaction corrected band structure of black-phase SmS., Physica B., **230&232**, 516–518 (1997)

21. *Yu. Kagan, K.A. Kikoin and A.S. Mishchenko*: On the interplay between heavy fermion and soft crystal field excitations in Kondo lattices., Physica B., **234–236**, 867–869 (1997)

23. *O.B. Maksimenko and A.S. Mishchenko*: Pseudo-Jahn-Teller Origin of Phonon Anomalies in IV-VI Compounds, Crystallography Reports, **42**, 547–552 (1997)

23. *K.A. Kikoin, M.N. Kiselev and A.S. Mishchenko*: Spin liquid in almost antiferromagnetic Kondo lattice., JETP, **85**, 399–414 (1997)

24. *A.S. Mishchenko*: Crystalline fields in systems with exchange and magnetoelastic interaction., JETP Lett., **66**, 487–493 (1997)

25. *M.N. Kiselev and A.S. Mishchenko*: Paramagnetic labeling as a method for soft spectroscopy of electronic states, JETP, **86**, 1008–1019 (1998)

26. *A.S. Mishchenko*: Quasielastic magnetic scattering of neutrons by heavy-fermion systems, JETP Lett., **68**, 514–520 (1998)

27. *P. Lemmens, M. Fischer, G. Els, G. Güntherodt, A.S. Mishchenko, M. Weiden, R. Hauptmann, C. Geibel and F.Steglich*: Magnetic bound states in the quarter-filled ladder system $\alpha'NaV_2O_6$, Phys. Rev. B., **58**, 14159–14162 (1998)

28. *K.A. Kikoin, M.N. Kiselev, A.S. Mishchenko and A. de Visser*: Thermodynamics of CeNiSn at low tempreature and in low magnetic field, Physica B, **259-261**, 296–297 (1999)

29. *K.A. Kikoin, M.N. Kiselev, A.S. Mishchenko and A.de Visser*: Thermodynamics of CeNiSn at low tempreatures and in low magnetic fields, Phys. Rev. B., **59**, 15070–15084, (1999)

30. *V.A. Kashurnikov, A.S. Mishchenko, I.S. Tupitsyn and Y.G. Kharchenko*: Excitations in one-dimensional bose gas: Exact quantum Monte Carlo method, Phys. Low-Dim Str. **5-6**, 13–22 (1999)

31 *A.S. Mishchenko, N.V. Prokof'ev, A. Sakamoto and B.V. Svistunov*: Diagrammatic quantum Monte Carlo study of the Fröhlich polaron, Phys. Rev. B, **62**, 6317-6336, (2000)

32 *A.S. Mishchenko and N. Nagaosa*: Quasi-degenerate self-trapping in one-dimensional charge-transfer exciton, Phys. Rev. Lett., **86**, 4624-4627 (2001)

33 *A.S. Mishchenko, N.V. Prokof'ev and B.V. Svistunov*: Single hole spectral function and spin-charge sepration in the t – J model, Phys. Rev. B **64**, 033101-1–033101-4, (2001)

34 (*A.S. Mishchenko, N.V. Prokof'ev, A. Sakamoto and B.V. Svistunov*: Comprehensive study of Fröhlich polaron, Int. J. Mod. Phys. B **15**, 3940-3943 (2001)

35 *A.S. Mishchenko and N.Nagaosa*: Quasi-degenerate self-trapping and its application to anthracene-PMDA: phenomenon, optical absorption and luminescence time-resolved spectroscopy, Int. J. Mod. Phys. B **15**, 3673-3676 (2001)

36 *E.A. Burovski, A.S. Mishchenko, N.V. Prokof'ev and B.V. Svistunov*: Diagrammatic quantum Monte Carlo for two-body problem: Applied to excitons, Phys. Rev. Lett., **87**, 186402-1–186402-4 (2001)

37 *S. Murakami, R. Shindou, N. Nagaosa and A.S. Mishchenko*: Theory of Ferromagnetism in $Ca_{1-x}La_xB_6$, Phys. Rev. Lett., **88**, 126404-1–126404-4 (2002)

38 *A.S. Mishchenko, N. Nagaosa, N.V. Prokof'ev, A. Sakamoto and B.V. Svistunov* : Self-trapping of polarons in the Rashba-Pekar model, Phys. Rev. B **66** 020301(R)-1–020301(R)-4 (2002)

39 *S. Murakami, R. Shindou, N. Nagaosa and A.S. Mishchenko*: Lattice distortion and Ferromagnetism in $Ca_{1-x}La_xB_6$, J. Phys. Chem. Solids, **63**(6-8), 1285-1287 (2002)

40 *A.S. Mishchenko and N.Nagaosa*: Interplay of magnetic frustrations and lattice instability, J. Phys. Chem. Solids, **63**, 1603-1606 (2002)

41 *S. Murakami, R. Shindou, N. Nagaosa and A.S. Mishchenko*: Lattice distortion and Ferromagnetism in $Ca_{1-x}La_xB_6$, J. Phys. Soc. Jpn., **71 Suppl**, 309-310 (2002)

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