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Research Interests

Studies of producing SPD* nanomaterials, their microstructural characterization, investigation of their unusual properties and applications;

Studies of atomic structure, synthesis, as well as strength and ductility, and the modelling of superplasticity of SPD produced nanomaterials.

*SPD – severe plastic deformation

Professional Experience

2004 - Current

USATU, Chair of Nanotechnology

- Head

2002 - 2004

Ufa State Aviation Technical University (USATU), Chair of General Physics

- Head

1995 - Current

Institute of Physics of Advanced Materials, USATU

- Professor and Scientific Director

1986 - 1995

Institute of Metals Superplasticity Problems (IMSP), Russian Academy of Sciences

- Professor, Head of Laboratory, Scientific Vice Director

1980-1986

Department of Physical Metallurgy, Ufa Aviation Institute

- Research Director

1973 - 1980

Department of General Technology and Metals Science, Ufa Aviation Institute (present USATU)

- Research Associate and Instructor

Education

1984

Institute for Materials Science, Academy of Sciences of the USSR Kiev

- Dr. Sci. (Solid State Phys.) (Habilitation)

1977

State University of Kharkov, Ukraine, USSR

- Cand. Sci. in Solid State Physics (equals Ph.D.)

1971

Ural State Technical University (former Ural Polytechnic Institute, USSR), Yekaterinburg, Russia

- Diploma Thesis in Physical Metallurgy

Awards and Honors

CURRENTLY HOLDS A POSITION IN THE TOP TEN OF MOST CITED AUTHORS PUBLISHING IN MATERIALS SCIENCE COMPILED BY THE INSTITUTE FOR SCIENTIFIC INFORMATION (ISI) (PHILADELPHIA, USA)

(<http://www.in-cites.com/top/2005>)

- Gold Medal of All-Russia Exhibition of Achievements, 2003, Moscow, Russia
- Gold Medal of All-Russia Exhibition of Achievements, 2002, Moscow, Russia
- The Humboldt Foundation Research Award, 2001, Germany
- Professorship, University of Vienna, 2000, April – June
- NSF Scholarship, University of Southern California, LA, USA, 1997, 1999, February
- NSF Scholarship and Professorship, University of California, Davis, USA, 1997, 1998, 1999, July-August
- Professorship, Doshisha University, Kyoto, Japan, July-September, 1996
- Award from International Science Foundation (Soros) USA-Russia, 1994
- Professorship, INPG, Grenoble, France, 1992, 1993, 1995, February-April
- COBASE Scholar in Northwestern University, October-December, 1994, Evanston, USA
- Award for Outstanding Russian Scientists, 1994, 1997, Moscow, Russia
- Medal of Institute of Material Science, Tokyo State University, 1991, Japan
- Corresponding Member of Bashkir Academy of Sciences, 1991, Ufa, Russia
- Diploma for Scientific Discovery in the USSR, 1987, Moscow, Russia
- Silver Medal of Exhibition of the USSR Achievements, 1988, Moscow, Russia
- Award for the Best Research among Young Scientists, 1977, Ufa, Russia
- Academic Committee for New Materials, Moscow, Russia
- Interstate Council on Strength and Plasticity, Saint-Petersburg, Russia
- Bashkir Academy of Sciences, Ufa, Russia
- Council for Habitation Thesis Defence, Ufa, Russia
- International Committee for Nanostructured Materials, Sendai, Japan
- The Minerals, Metals and Materials Society (TMS), USA
- International Academy of Sciences for Institutions of Higher Learning, Moscow, Russia
- International Committee on Superplasticity, Orlando, USA.
- International Committee on Strength and Plasticity, USA.
- International Committee on Physics of Strength and Ductility, Budapest, Hungary
- The Materials Research Society (MRS), USA
- The Steering Committee “nanoSPD”: Bulk Nanomaterials through Severe Plastic Deformation

Membership in Professional and Technical Societies

Mentoring Experience

33 students in Mat. Sci. and Solid State Physics, Degree of Candidate of Sciences equal to Ph.D. and 4 habilitations

Invited Talks and Lectures presented at International Conferences and Meetings

2004

- The International Conference on Fabrication and Properties of Metallic Nanomaterials, Warsaw, Poland, June 17-19
- 11th International Symposium on Metastable Mechanically Alloyed and Nanocrystalline Materials -ISMANAM 2004

2003

- The 2nd International Conference on Nanomaterials by Severe Plastic Deformation: Fundamentals – Processing – Applications (“nanoSPD2”), Vienna, Austria, December 9-13, (Co-Chairman)
- The 2003 TMS Annual Meeting, San Diego, CA, USA, March 2-6
- International Conference on Processing and Manufacture of Advanced Materials ‘THERMEC’2003’, 7-11 July, Madrid, Spain
- 10th International Symposium on Metastable, Mechanically Alloyed and Nanocrystalline Materials ‘ISMANAM-2003’, 24-28 August, Foz do Iguaçu, Brazil
- II Workshop on Metastable and Nanostructured Materials ‘NanoMat 2003’, 28-29 August, Foz do Iguaçu, Brazil
- NATO Advanced Research Workshop Metallic Materials with High Structural Efficiency”, 7-13 September, Kiev, Ukraine
- E-MRS 2003 Fall Meeting, 15-19 September, Warsaw, Poland (also Co-organizer of Symposium G “Bulk and Graded Nanometals”)

2002

- The TMS Annual Meeting, Seattle, WA, USA, Feb. 17-21
- The Fall 2002 Meeting of E-MRS, Warsaw, Poland, Sept. 16-18
- Workshop “Nanostructured Metals Obtained by Severe Plastic Deformation”, Warsaw, Poland, April 11-12

2001

- International Symposium on Ultrafine Grained Steels, Fukuoka, Japan, September 20-22
- Japan Institute of Metals Fall Meeting, Osaka, Japan, September 23-25
- 4th High Pressure School on Chemistry, Biology, Materials Science and Techniques, Warsaw, Poland, June 20-27
- Conference on Structure and Mechanical Properties of Nanostructured Materials, Barga, Italy, June 3-8
- Spring Meeting of the Korean Institute of Metals and Materials, Pusan, Korea, April 27-28
- 12th Conference on Solid State Physics and Advanced Materials Symposium, Hurgada, Egypt, March 18-23
- II Workshop of the Network of Centers of Excellence, Ulm, Germany, October 5-6
- The 2001 TMS Annual Meeting, New Orleans, USA, February 11 – 15
- Workshop “Nanostructured Materials”, Vienna, Austria, November 19
- The NATO ASI, Greece
- Superplasticity in Advanced Materials ICSAM-2000, Orlando, USA

2000

- The 2000 TMS Annual Meeting, Nashville, USA, March 12 – 16
- NANO-2000, Sendai, Japan, August 18-25
- Materials Week 2000, Munich, Germany, September 25 – 28

1999

- The NATO ASI, Greece
- ISMANAM-99, Dresden
- The NATO ARW: Severe Plastic Deformation, Moscow, Aug 2-6
- The MRS 1999 Fall Meeting, Boston, USA, November 29 – December 3

Publications

Books

1. O.A. Kaibyshev, R.Z. Valiev, "Grain boundaries and properties of metals", 1987, Metallurgiya Publ., Moscow, 214 p. (in Russian)
2. R.Z. Valiev, A.V. Vergazov, V.Yu. Gertsman, "Crystal geometrical analysis of intercrystalline boundaries in electron microscopy", 1991, Nauka Pub., Moscow, 232 p. (in Russian).
3. Ultrafine-Grained Materials Processed by Severe Plastic Deformation, R.Z. Valiev (ed.), Annales de Chimie, Vol. 21, No 6-7, p. 369-554, 1996.
4. R.Z. Valiev, I.V. Alexandrov, "Nanostructured Materials Produced by Severe Plastic Deformation", 2000, Logos Pub., Moscow, 272 p. (in Russian).
5. Proceedings of the NATO ARW on Investigations and Applications of Severe Plastic Deformation (Moscow, Russia), NATO Sci. Series, eds. Lowe, T.C. and Valiev, R.Z. Kluwer Publ., 80, (2000), 394 p.
6. Yu.R. Kolobov, R.Z. Valiev et al., eds. Yu.R. Kolobov and R.Z. Valiev, "Grain Boundary Diffusion and Properties of Nanostructured Materials", 2001, Nauka Pub., Novosibirsk, 232 p. (in Russian).
7. Recent Advances in Nanostructured Materials Produced By Severe Plastic Deformation, R.Z. Valiev, A.V. Korznikov, I.V. Alexandrov (eds.), Ann. Chim. Sci. Mat., Vol. 27, No. 3, 2002.
8. Composite authors, "New Materials", 2002, MISA Pub., Moscow, 736 p. (in Russian).
9. Nanomaterials by Severe Plastic Deformation, M.J. Zehetbauer, R.Z. Valiev (eds.), Proceedings of the Conference "Nanomaterials by Severe Plastic Deformation – NanoSPD-2", Wiley-VCH, December 9-13, 2002, Vienna, Austria.

Overviews

1. R.Z. Valiev, V.Yu. Gertsman, O.A. Kaibyshev. Effect of Grain Boundaries and Dislocations Interactions on Properties of Materials// Metallofizika, Kiev, 81, N6, p.72-84, 1986 (in Russian).
2. R.Z. Valiev, V.Yu. Gertsman, O.A. Kaibyshev. Structure and Properties of Grain Boundaries during External Interaction// Phys. Stat. Sol. (a), 1986, 97, p. 11-56.
3. R.Z. Valiev, V.G. Khairullin and A.D. Sheikh-Ali. Types of Grain Boundary Sliding in Bicrystals of Zn: Phenomenology and Mechanisms// Structure and Property Relationship for Interfaces, 1992, Oxford Press.
4. R.Z. Valiev, A.V. Korznikov and R.R. Mulyukov. Structure and Properties of Ultrafine-Grained Materials Produced by Severe Plastic Deformation// Material Science Engineering A, 1993, Vol.168, No 2, pp. 141-148.
5. R.Z. Valiev. Ultrafine-Grained Materials Produced by Severe Plastic Deformation// Ann. Chim. Fr., 1996, 21, pp.369-378.
6. R.Z. Valiev, R.K. Islamgaliev. Structure and Mechanical Behaviour of Ultrafine-Grained Metals and Alloys Subjected to Intense Plastic Deformation// The Physics of Metals and Metallography, 1998, Vol. 85, No.3, pp. 367-377.
7. R. Z. Valiev, R. K. Islamgaliev and I. V. Alexandrov. Bulk Nanostructured Materials from Severe Plastic Deformation// Progress in Materials Science,

- 2000, Vol. 45, pp. 103-189.
8. T.C. Lowe and R.Z. Valiev. Producing Nanoscale Microstructures through Severe Plastic Deformation// JOM, 2000, Vol. 52, No. 4, p. 27.
 9. M.D. Baro, Yu.R. Kolobov, I.A. Ovid'ko, H.-E. Schaefer, B.B. Straumal, R.Z. Valiev, I.V. Alexandrov, M. Ivanov, K. Reimann, A.B. Reizis, S. Surinash, and A.P. Zhilyaev. Diffusion and Related Phenomena in Bulk Nanostructured Materials// Rev. Adv. Mater. Sci., 2001, Vol. 2, pp. 1-43.
 10. Terry C. Lowe, Ruslan Z. Valiev. The Use of Severe Plastic Deformation Techniques in Grain Refinement// JOM, 2004, Vol. 56, No. 10, pp. 64-68.
 11. Ruslan Valiev. Nanostructuring of Metals by Severe Plastic Deformation for Advanced Properties// Nature Materials, 2004, Vol. 3, pp. 511-516.

Journal Articles

2006

1. Ruslan Z. Valiev. Some new trends in SPD processing for fabrication of bulk nanostructured materials// Mater. Sci. Forum, 2006, Vol. 503-504, pp.3-10.
2. G. Wilde, N. Boucharat, G.P. Dinda, H. Rösner, R.Z. Valiev. New routes for synthesizing massive nanocrystalline materials// Mater. Sci. Forum, 2006, Vol. 503-504, pp.425-432.
3. Yu. Ivanisenko, I. MacLaren, R.Z. Valiev, H.-J. Fecht. A new deformation mechanism in nanoscale Fe-C composite as a result of a stress-induced $\alpha \rightarrow \gamma$ transformation// Mater. Sci. Forum, 2006, Vol. 503-504, pp.439-446.
4. V.G. Pushin, R.Z. Valiev, Y.T. Zhu, S.D. Prokoshkin, D.V. Gunderov, L.I. Yurchenko. Effect of equal channel angular pressing and repeated rolling on structure, phase transformations and properties of TiNi shape memory alloys// Mater. Sci. Forum, 2006, Vol. 503-504, pp.539-544.
5. V.G. Pushin, A.V. Korolev, N.I. Kurov, D.V. Gunderov, R.Z. Valiev, V.V. Koledov, V.G. Shavrov. SPD-induced nanocrystallization of shape memory Ni₂MnGa-based and NiTi-based alloys quenched from liquid state// Mater. Sci. Forum, 2006, Vol. 503-504, pp.454-550.
6. G.V. Nurislamova, R.K. Islamgaliev, R.Z. Valiev. Microstructure and mechanical properties of pure nickel processed by severe plastic deformation// Mater. Sci. Forum, 2006, Vol. 503-504, pp.579-584.
7. R.K. Islamgaliev, N.F. Yunusova, R.Z. Valiev. The influence of the SPD temperature on superplasticity of aluminium alloys// Mater. Sci. Forum, 2006, Vol. 503-504, pp.585-590.
8. E.D. Tabachnikova, V.Z. Bengus, A.V. Podolsky, S.N. Smirnov, D.V. Gunderov, R.Z. Valiev. Low temperature mechanical properties of different commercial purity nanostructured titanium processed by ECA pressing// Mater. Sci. Forum, 2006, Vol. 503-504, pp.633-638.
9. I.P. Semenova, L.R. Saitova, G.I. Raab, A.I. Korshunov, Y.T. Zhu, T.C. Lowe, R.Z. Valiev. Microstructural features and mechanical properties of the Ti-6Al-4V ELI alloy processed by severe plastic deformation// Mater. Sci. Forum, 2006, Vol. 503-504, pp.757-762.
10. V.V. Latysh, I.P. Semenova, G.H. Salimgareeva, I.V. Kandarov, Y.T. Zhu, T.C. Lowe, R.Z. Valiev. Microstructure and properties of Ti rods produced by multi-step SPD// Mater. Sci. Forum, 2006, Vol. 503-504, pp.763-768.

2005

11. N. Boucharat, R. Hebert, H. Roësner, R. Valiev, G. Wilde. Nanocrystallization of amorphous Al₈₈Y₇Fe₅ alloy induced by plastic deformation// Scripta Mat., 2005, Vol. 53, pp.823-828.
12. N. Krasilnikov, Z. Pakiel, W. Lojkowski, R. Valiev. Excellent mechanical properties of nickel processed by high pressure technique// Solid State Phenomena, 2005, Vol.101-102, pp.49-54.
13. N. Nita, R. Schaeublin, M. Victoria, R.Z. Valiev. Effects of irradiation on the microstructure and mechanical properties of nanostructured materials// Philosophical Magazine, 2005, Vol.85 (4-7), pp.723-735.

14. I. Sabirov, O. Kolednik, R.Z. Valiev, R. Pippan. Equal channel angular pressing of metal matrix composites: Effect on particle distribution and fracture toughness// *Acta Mat.*, 2005, Vol. 53, pp. 4919–4930.
15. L.R. Saitova, I.P. Semenova, G.I. Raab, R.Z. Valiev. Effect of severe plastic deformation on mechanical properties and structure of Ti alloys// *Materials Deformation and Failure*, 2005, No.3, p.31, (in Russian).
16. V.V. Stolyarov, Ya.E. Beigelzimer, D.V. Orlov, R.Z. Valiev. Microstructure refinement and mechanical structure of Ti subjected to twist extrusion and further rolling// *The Physics of Metals and Metallography*, 2005, Vol. 99, No.2, pp.92-99, (in Russian).
17. M. Sus-Ryszkowska, Z. Pakiela, R.Z. Valiev, J.W. Wyrzykowski, K.J. Kurzydowski. Mechanical properties of nanostructured iron obtained by various methods of severe plastic deformation// *Solid State Phenomena*, 2005, Vol. 101-102, pp. 85-90.
18. Ruslan Z. Valiev. Recent progress in developing bulk nanostructured SPD materials with unique properties. Proceedings of EMRS 2003 Fall Meeting, Symposium “Bulk and Graded Nanometals”// *Solid State Phenomena*, 2005, Vol. 101-102, pp. 3-12.
19. R.Z. Valiev, D.V. Gunderov, V.G. Pushin. Metastable nanostructured SPD Ti-Ni alloys with unique properties// *J. Metas. Nanocryst. Mater.*, 2005, Vol. 24-25, pp. 7-12.
20. Q. Wei, T. Jiao, K.T. Ramesh, E. Ma, L.J. Kecskes, L. Magness, R. Dowding, V.U. Kazykhanov, R.Z. Valiev. Mechanical behavior and dynamic failure of high-strength ultrafine grained tungsten under uniaxial compression// *Acta Mater.*, xxx (2005) xxx–xxx
21. Y.H. Zhao, X.Z. Liao, and Y.T. Zhua, R.Z. Valiev. Enhanced mechanical properties in ultrafine grained 7075 Al alloy// *J. Mater. Res.*, 2005, Vol.20, No.2, pp.288-291.
22. Y.T. Zhu, X. Z. Liao, R.Z. Valiev. Formation mechanism of fivefold deformation twins in nanocrystalline face-centered-cubic metals// *Appl. Phys. Lett.*, 2005, 86, pp.103112-1 – 103112-3.
23. Aleksandrov I.V., Kilmametov A.R., Valiev R.Z. X-ray study of ultrafine-grained metals processed by equal channel angular pressing// *Rus. Metall. (Metally)*, 2004, Vol. 1, p. 63, (in Russian).
24. A. Balyanov, J. Kutnyakova, N.A. Amirkhanova, V.V. Stolyarov, R.Z. Valiev, X.Z. Liao, Y.H. Zhao, Y.B. Jiang, H.F.Xu, T.C. Lowe, Y.T.Zhu. Corrosion resistance of ultra fine-grained Ti// *Scrip. Mat.*, 2004, No.51, pp. 225-229.
25. J.Y. Huang, Y.T. Zhu, X.Z. Liao, R.Z. Valiev, Amorphization of TiNi induced by high-pressure torsion// *Philosophical Magazine Letters*, 2004, Vol. 84, No. 3, pp. 183-190.
26. Z. Lee, F. Zhou, R.Z. Valiev, E.J. Lavernia, S.R. Nutt. Microstructure and microhardness of cryomilled bulk nanocrystalline Al–7.5%Mg alloy consolidated by high pressure torsion// *Scripta Materialia*, 2004, 51, pp.209–214.
27. X. Z. Liao, Y. H. Zhao, S. G. Srinivasan, & Y. T. Zhu, R. Z. Valiev & D. V. Gunderov. Deformation twinning in nanocrystalline copper at room temperature and low strain rate// *Applied Physics Letters*, Vol. 84, No. 4, pp. 592-594 (2004).
28. X. Z. Liao, Y. H. Zhao, & Y. T. Zhu, R. Z. Valiev & D. V. Gunderov. Grain-size effect on the deformation mechanisms of nanostructured copper processed by high-pressure torsion// *Journal of Applied Physics*, 2004, Vol.96, No.1, p.636-640.
29. Georgy J. Raab, Ruslan Z. Valiev, Terry C. Lowe, Yuntian T. Zhu. Continuous processing of ultrafine grained Al by ECAP – Conform// *Mat. Sci. Eng.*, 2004, Vol. A 382, pp.30-34.
30. Raab G.I., Kulyasov G.V., Valiev R.Z. Study of mechanical properties of massive ultrafine-grained titanium billets produced by equal channel angular pressing// *Rus. Metall. (Metally)*, 2004, Vol.2, p.36, (in Russian).
31. G.I. Raab, E.P. Soshnikova, R.Z. Valiev. Influence of temperature and

hydrostatic pressure during equal channel angular pressing on the microstructure of commercial-purity Ti// *Mat. Sci. Eng.*, 2004, Vol. 387-389, pp. 674-677.

32. V.V. Stolyarov, L.Sh. Shuster, M.Sh. Migranov, R.Z. Valiev, Y.T. Zhu. Reduction of friction coefficient of ultrafine-grained CP titanium// *Mater. Sci. Eng. A*, 2004, 371, pp.313-317.
33. Stolyarov V.V., Valiev R.Z. Manufacturing of metastable ultrafine-grained alloys by equal channel angular pressing// *Rus. Metall. (Metally)*, 2004, Vol.2, p.5, (in Russian).
34. B.B. Straumal, B. Baretzky, A.A. Mazilkin, F. Phillipp, O.A. Kogtenkova, M.N. Volkov, R.Z. Valiev. Formation of nanograined structure and decomposition of supersaturated solid solution during high pressure torsion of Al-Zn and Al-Mg alloys// *Acta. Mater.*, 2004, Vol.52, pp.4469-4478.
35. Ruslan Z. Valiev. Bulk nanostructured SPD materials with unique properties// *Journal of Metastable and Nanocrystalline Materials*, 2004, Vol. 20-21, pp.366-375 (2004).
36. R.Z. Valiev. Development of equal-channel angular pressing to produce ultrafine-grained metals and alloys// *Rus. Metall. (Metally)*, 2004, Vol. 2004, No. 1, pp. 10-15, (in Russian).
37. Ruslan Valiev. Nanostructuring of metals by severe plastic deformation for advanced properties// *Nature Materials*, 2004, Vol.3, pp.511-516.
38. R.Z. Valiev, R.K. Islamgaliev, N.F. Yunusova. Microstructural aspects in superplasticity of ultrafine-grained SPD alloys// *Mater. Sci. Forum*, 2004, Vol.447-448, pp.411-416.
39. R.Z. Valiev, V.G. Pushin, D.V. Gunderov, A.G. Popov. Using severe plastic deformation for the fabrication of bulk nanocrystalline materials from amorphous alloys// *Dokladi RAN*, 2004, Vol. 398, №1, pp. 1-3, (in Russian).
40. R.Z. Valiev, D.V. Gunderov, A.P. Zhilyaev, A.G. Popov, V.G. Pushin. Nanocrystallization induced by severe plastic deformation of amorphous alloys// *Journal of Metastable and Nanocrystalline Materials*, 2004, Vol.22, pp.21-26.
41. Terry C. Lowe, Ruslan Z. Valiev. The use of severe plastic deformation techniques in grain refinement// *JOM*, 2004, Vol. 56, No 10, pp. 64-68.
42. Yunusova N.F., Islamgaliev R.K., Valiev R.Z. High-speed superplasticity in 1420- and 1421-Aluminium alloys produced by equal channel angular pressing// *Rus. Metall. (Metally)*, 2004, Vol. 2, p. 21, (in Russian).
43. Y.M. Wang, E. Ma, R.Z. Valiev, Y. Zhu. Tough nanostructured metals at cryogenic temperatures// *Adv. Mater.*, 2004, Vol.16, No.4, pp. 328-331.
44. Valiev R.Z. The development of equal channel angular pressing for production of metals and alloys with ultrafine-grained structure// *Rus. Metall. (Metally)*, 2004, Vol.1, p.15, (in Russian).
45. L.R. Saitova, I.P. Semenova, G.I. Raab, R.Z. Valiev. Improvement of mechanical properties of Ti-6Al-4V alloy by methods of equal-channel angular pressing followed by plastic deformation// *Physics and Engineering of High-Pressures*, 2004, Vol. 14, No.4, pp. 19-23, (in Russian).
46. I.V. Alexandrov, A.A. Dubravina, A.R. Kilmametov, V.U. Kazykhanov, R.Z. Valiev. Textures in nanostructured metals processed by severe plastic deformation// *Metals and Materials International*, 2003, Vol.9, No.2, pp. 151-156.
47. V. Alexandrov, A.R. Kilmametov, N. A. Enikeev, A. A. Dubravina, R. Z. Valiev. Peculiarities of microstructure of SPD materials// *USATU Bulletin*, Vol. 4, Issue 2, 2003, p. 89-99.
48. H. Ferkel, M. Glatzer, Y. Estrin, R.Z. Valiev, C. Blawert and B.L. Mordike. "RF Plasma nitriding of severely deformed iron-based alloys"// *Mater. Sci. Eng.*, 2003, A348, pp.100-110.
49. J. Gubicza, I.C. Dragomir, G. Ribarik, Y.T. Zhu, R. Valiev, T. Ungar. Characterization of the microstructure of severely deformed titanium by X-ray diffraction profile analysis// *Materials Science Forum*, 2003, Vols.414-415, p.229-234.

50. R. K. Islamgaliev, N. F. Yunusova, R. Z. Valiev, N. K. Tsenev, V. N. Perevezentsev and T. G. Langdon. Characteristics of superplasticity in an ultrafine-grained aluminum alloy processed by ECA pressing// *Scripta Materialia*, 2003, Vol.49, Issue 5, pp. 467-472.
51. Yu. Ivanisenko, R.K. Wunderlich, R.Z. Valiev, H.-J. Fecht. Annealing behaviour of nanostructured carbon steel produced by severe plastic deformation// *Scripta Mater.*, 2003, 49, pp.947-952.
52. Yu. Ivanissenko, W. Lojkowski, R.Z. Valiev, H.-J. Fecht. The mechanism of formation of nanostructure and dissolution of cementite in a pearlitic steel during high pressure torsion// *Acta Mat.*, 2003, No.51, pp. 5555-5570.
53. H. Mughrabi, H.W. Höppel, M. Kautz, R.Z. Valiev. Annealing treatments to enhance thermal and mechanical stability of ultrafine-grained metals produced by severe plastic deformation// *Zeitschrift für Metallkunde*, 2003, Vol.94, No.10, pp.1079-1083.
54. V. G. Pushin, R. Z. Valiev, and L. I. Yurchenko. Processing of nanostructured TiNi-shape memory alloys: methods, structures, properties, applications// *Journal de Physique Iv*, 2003, 112, 659.
55. V.G. Pushin, R.Z. Valiev. The nanostructured TiNi shape-memory alloys: new properties and applications// *Solid State Phenomena*, 2003, Vol. 94, pp.13-24
56. A.V. Sergueeva, C. Song, R.Z. Valiev, A.K. Mukherjee. Structure and properties of amorphous and nanocrystalline NiTi prepared by severe plastic deformation and annealing// *Mater. Sci. Eng.*, 2003, A339, pp.159-165.
57. V.V. Stolyarov, Y.T. Zhu, I.V. Alexandrov, T.C. Lowe, R.Z. Valiev. Grain refinement and properties of pure Ti processed by warm ECAP and cold rolling// *Mater. Sci. Eng. A.*, 2003, Vol. 343, No. 1-2, pp. 43-50.
58. R.Z. Valiev. Paradoxes of Severe Plastic Deformation// *Adv. Eng. Mat.*, 2003, Vol. 5, No. 5, pp.296-300.
59. R.Z. Valiev. Recent developments of SPD processing for fabrication of bulk nanostructured materials// *Materials Science Forum*, 2003, Vols. 426-432, pp. 237-244.
60. R.Z. Valiev, A.V. Sergueeva, A.K. Mukherjee. The Effect of annealing on tensile deformation behavior of nanostructured SPD titanium// *Scripta Mater.*, 2003, Vol. 49, No.7, pp. 669-674.
61. S.D. Wu, Z.G. Wang, C.B. Jiang, G.Y. Li, I.V. Alexandrov, R.Z. Valiev. The formation of PSB-like shear bands in cyclically deformed ultrafine grained copper processed by ECAP// *Scripta Mater.*, 2003, Vol. 48, p. 1605-1609.
62. Y.T. Zhu and J.Y. Huang, J. Gubicza and T. Ungár, Y.M. Wang and E. Ma, R.Z. Valiev. Nanostructures in Ti processed by severe plastic deformation// *J. Mater. Res.*, 2003, Vol. 18, No. 8, pp. 1908-1917.
63. Y.T. Zhu, Y.R. Kolobov and G.P. Grabovetskaya, V.V. Stolyarov, N.V. Girsova, R.Z. Valiev. Microstructures and mechanical properties of ultrafine-grained Ti foils processed by equal-channel angular pressing and cold rolling// *JMR*, 2003, Vol. 18, No. 4, pp. 1011-1016.
64. I.V. Aleksandrov, G.I. Raab, L.O. Shestakova, A.R. Kil'mametov, R.Z. Valiev. Refinement of tungsten microstructure by severe plastic deformation// *The Physics of Metals and Metallography*, 2002, Vol.93, No.5, pp.493-500 (in English), pp.105-112, (in Russian).
65. V.Z. Bengus, E.D. Tabachnikova, V.D. Natsik, J. Miskuf, K. Csach, V.V. Stolyarov and R.Z. Valiev. Low temperature deformation and destruction of bulk nanostructured titanium, processed by severe plastic deformation by ECA pressing// *Low Temperature Physics*, 2002, Vol.28, No.11, pp.1-16 (in Russian), pp.864-874 (in English).
66. V.Z. Bengus, E.D. Tabachnikova, V.D. Natsik, J. Miskuf, K. Csach, V.V. Stolyarov, and R.Z. Valiev. Mechanical behavior at 300-4.2 K of bulk nanostructured titanium processed by severe plastic deformation// *The Physics of Metals and Metallography*, 2002, Vol.94, Suppl. 1, pp. S11-S23.
67. N.A. Enikeev, I.V. Alexandrov, R.Z. Valiev. Computer simulation and X-ray

- structural analysis of defect structures in nanomaterials// The Physics of Metals and Metallography, 2002, Vol.93, No.6, p.19-28, (in Russian).
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