

## Volume 68, Number 10, 2004

### Proceedings of the Fifteenth International Conference "Physics of Strength and Plasticity of Materials"

<b>V.I. Betekhtin, A.M. Glezer, and A.A. Vikarchuk</b> Physics of Strength and Plasticity of Solids: Problems and Prospects .....	1543
<b>A.A. Vikarchuk, A.P. Volenko, and V.I. Skidanenko</b> Model of Initial Stage of Copper Electrocrystallization on Indifferent Substrates .....	1545
<b>M.M. Krishtal</b> General Theory of Instability and Mesoscopic Inhomogeneity of Plastic Deformation .....	1553
<b>S.V. Starenchenko, V.A. Starenchenko, I.P. Zamyatina, and O.D. Pantyukhova</b> Heterogeneous Destruction of Long-Range Atomic Order During Plastic Deformation of Ordered Alloys .....	1568
<b>T.A. Kovalevskaya, O.I. Daneiko, and S.N. Kolupaeva</b> Effect of Scale Characteristics of Hardening Phase on Regularities of Plastic Deformation in Dispersion-Hardened Materials .....	1579
<b>E.V. Kozlov, N.A. Popova, and N.A. Koneva</b> Fragmented Substructure Formed in bcc Steels During Deformation .....	1587
<b>Yu.I. Golovin, S.N. Dub, V.I. Ivolgin, V.V. Korenkov, and A.I. Tyurin</b> Plastic Deformation Instability in Micro- and Nanovolumes of Solids .....	1597
<b>Yu.F. Ivanov, V.V. Grachev, M.P. Ivakhin, A.V. Gromova, V.V. Kovalenko, V.Ya. Tsellermaer, and E.V. Kozlov</b> Evolution of Defect Substructure of Quenched 60GS2 Steel under Electrostimulated Fatigue .....	1607
<b>N.A. Grigorieva and T.A. Kovalevskaya</b> Experimental Investigation of Mechanisms of Plastic Deformation of Al-6%Zn-3%Mg Alloy .....	1615
<b>V.A. Pozdnyakov and A.M. Glezer</b> Possible Ways of Evolution of Defect Structure During Severe Plastic Deformation: Role of Relaxation Mechanisms .....	1621
<b>L.A. Teplyakova, T.S. Kunitsina, N.A. Koneva, and E.V. Kozlov</b> Regularities of Formation of Network Dislocation Structure in Ni <sub>3</sub> Fe Alloy Single Crystals .....	1629
<b>Yu.A. Perlovich, M.G. Isaenkova, and V.A. Fesenko</b> Regularities of Substructural Inhomogeneity of Deformed Metals .....	1636
<b>D.V. Lychagin</b> Strain Distribution on the Surface of FCC Metals under Compression .....	1647
<b>D.L. Merson</b> Special Role of Surface in Formation of Acoustic Emission Peak Observed near Yield Point .....	1653
<b>V.A. Fedorov, Yu.I. Tyalin, V.A. Tyalina, T.N. Plushnikova, and M.V. Chemerkina</b> Crack Nucleation at Boundary of Free Elastic Twin in Calcite .....	1661
<b>S.G. Zaichenko and A.M. Glezer</b> Physical Model of Ductile-Brittle Transition in Amorphous Metal-Metalloid Alloys: Structure Inhomogeneities Inducing Elastic Stress Fields under Active Loading .....	1665

<b>A.V. Kudrya and E.A. Sokolovskaya</b> Inhomogeneity of Different-Scale Structures and Fracture Toughness of Structural Steels .....	1673
<b>A.G. Lanin</b> Strength and Thermomechanical Hardening of Refractory Ceramic Materials .....	1683
<b>M.D. Starostenkov, M.V. Patudin, D.M. Starostenkov, and E.V. Kozlov</b> Self-Organization of Defect Structures in Crystals During Deformation .....	1691
<b>V.T. Degtyarev, A.Yu. Losev, F.T. Plotnikov, and N.A. Tyapunina</b> Polygonization in Ultrasound Field .....	1698
<b>A.Yu. Gufan, Yu.V. Prus, and V.V. Rummyantseva</b> Stoichiometric Order Stabilization in $\text{BaMg}_{1/3}\text{Nb}_{2/3}\text{O}_3$ and Three-Particle Interactions (This paper was presented at the International Symposium "Phase Transitions in Solid Solutions and Alloys" (OMA-2003). Rostov-on-Don, September 2003) .....	1701
<b>N.N. Bikkulova, S.A. Danilkin, and G.N. Asylguzhina</b> Study of Phase Transformations in $\text{Cu}_{1.8}\text{Se}$ Single Crystal (This paper was presented at the International Symposium "Phase Transitions in Solid Solutions and Alloys" (OMA-2003). Rostov-on-Don, September 2003) .....	1706
<b>I.L. Yakovleva, D.A. Mirzaev, V.M. Schastlivtsev, T.I. Tabatchikova, V.M. Umova, and Yu.V. Khlebnikova</b> Effect of Cooling Rate on $\beta \rightarrow \alpha$ Transformation in Zirconium (This paper was presented at the International Symposium "Phase Transitions in Solid Solutions and Alloys" (OMA-2003). Rostov-on-Don, September 2003) .....	1709