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| K.L. Wang, S.Q. Lu, X. Li and X.J. Dong | |
| Atom-Rich and Defect Effects on Electronic Structure and Magnetism in Co₂MnGe/MgO Heterojunction | 1838 |
| F. Cai, B. Wu, Y. Feng, Y. Chen, H.K. Yuan and H. Chen | |
| The Abnormal Deformation Behavior of B340/590 DP Steel at Elevated Temperature | 1843 |
| Y.Q. Guo, J.J. Han, M. Zhao, W. Chen and L. Chen | |
| Influence of RE Elements on Corrosion Rust Layer of Low Carbon Steel in CSP in Simulated Coastal Atmosphere | 1848 |
| T. Li, M. Qin, H. Zheng, Z.L. Jin, H.P. Ren and W.X. Li | |
| Microstructure of TC21 Titanium Alloy after Superplastic Deformation and Heat Treatment | 1855 |
| Z.W. Ling and H.B. Dong | |
| Dynamic Tensile Behaviour and Full Field Strain Measurement of High Strength Steel | 1859 |
| J.G. Qin, F.Y. Lu, Y.L. Lin, X.J. Wen and M.Z. Liang | |
| Property Study on High-Speed Steel Deposited TiN Coatings by Magnetron Sputter Ion Plating | 1866 |
| N. Zhang, C.H. Zhang and Y.H. Qiang | |
| Experimental Study on the Forming Limit Diagram of QP980 under Variable Pressing Velocities | 1870 |
| L. Ding, J.P. Lin and Z. Pang | |
| Study of Metallurgical Properties in the Sintered Ore with Variable SiO₂ | 1874 |
| Q.J. Zhang, Y.L. Li, X.G. Ma, Z.M. Cui and Y.Z. Zhang | |
| Investigation on Behavior of the early Stage of Aging in C17200 Alloys | 1878 |
| H.F. Lou, Q.S. Wang, G.L. Xie and L. Peng | |

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| Effect of Tungsten Addition on Microstructure and Mechanical Properties of TiAl-Based Alloy | 1884 |
| H.L. Sun, Z.W. Huang and D.G. Zhu | |
| Analysis on Affecting Factors of Slab Surface Transversal Corner Crack for Medium-Carbon Steel with Boron in Continuous Casting | 1890 |
| Q.C. Peng, Z.B. Tong and D.P. Fan | |
| Calculation of the Mg-Gd-Y Alloy Equilibrium Phase Diagram and its Verification at 450°C | 1896 |
| Y.C. Guo, Y.M. Sang, J.P. Li and Z. Yang | |
| Study on the Critical Damage Value and Processing Map of AZ80 Magnesium Alloy Forming at Elevated Temperatures | 1904 |
| Y. Xue, Z.M. Zhang and Y.J. Wu | |
| The Improved Friction Properties of Bonded MoS₂ Films by MAO Treating of Al Substrate | 1911 |
| H.J. Hu, H. Zhou, Y.G. Zheng, K.F. Zhang and Z.H. Wan | |

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| Mechanical Properties of WC-Co Cemented Carbide Prepared via Vacuum Sintering | 1917 |
| B.L. Liang, Y.L. Ai, C.H. Liu and N. Jiang | |
| Preparation of Bromine Carbon Alkyd Resin Retardant Coatings for Steel Structure | 1921 |
| J.F. Cui, B.B. Chen, J.H. Guo, Y.P. Zhou and B.P. Yang | |
| Optimized Wire Bonding Process on Micro-Connection Pad with Ni/CeO₂ Coatings | 1925 |
| C.Y. Wang, Q. Wang, H.Z. Li, X.Z. Ji and Z.L. Kang | |
| Preparation and Hydrogen Storage Kinetics of Nanocrystalline and Amorphous Mg₂Ni-Type Alloys | 1929 |
| Y.H. Zhang, C. Zhao, H. Wang, T. Yang, H.W. Shang and D.L. Zhao | |
| Preparation of Infrared Stealthy Coatings | 1934 |
| J.F. Cui, Y. Ma, B.P. Yang, J.H. Guo and Y.P. Zhou | |

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| Investigation on the Optical Performance of Co and Al Co-Doping ZnO Films | 1941 |
| G.Z. Song and D. Zhang | |
| Properties of N-Doped ZnO Films by RF Magnetron Sputtering | 1946 |
| Z. Hua, W.Q. Wan, X.W. Feng and H.Y. Kuang | |
| TEM Study of FePt and FePt:C/FePt Composite Double-Layered Thin Films | 1952 |
| L.F. Jin and X.Z. Li | |
| Synthesis and Characterization of CdTe Quantum Dots Capped by N-Acetyl-L-Cysteine | 1956 |
| X.L. Liao, N. Yang, L.X. Xie, X.C. Yang and X.P. Yang | |
| The Influence of Electrochemical Anodization for Porous Silicon Microcavity Fabrication | 1960 |
| H.Y. Zhang, X.Y. Lv and Z.H. Jia | |
| Substrate Temperature Effects on the Structural and Optical Properties of TiO₂-Doped ZnO Films for Organic Photovoltaic Devices | 1964 |
| T. Zhang, Z.Y. Zhong, J. Zhou and F.L. Sun | |
| Research on Accumulation PMOS Capacitors Based on Strained-Si/SiGe Material | 1968 |
| B. Wang, H.M. Zhang, H.Y. Hu, Y.M. Zhang, B. Shu, C.Y. Zhou and Y.C. Li | |
| Absolute Luminous Flux and Quantum Yield of Sm³⁺-Doped Cadmium-Aluminum-Silicate Glasses under the Pumping of Blue Light Emitting Diode | 1974 |
| Y. Lei, F.F. Fu, L. Zheng, Z.Q. Wang, X. Zhao and H. Lin | |
| Mixed State Hamiltonian Element for Plane Transversely Isotropic Magnetoelastic Solids | 1978 |
| X.C. Li and J.S. Zhang | |
| Effect of High-K Material on Gate Threshold Voltage for Double-Gate Tunnel FET | 1984 |
| Y.C. Li, H.M. Zhang, H.Y. Hu, Y.M. Zhang, B. Wang, C.Y. Zhou and Y.L. Lou | |
| Improvement of the Absorbing Properties of Single Layer Microwave Absorbing Materials via Frequency Selective Surface | 1988 |
| H. Tian and H.T. Liu | |

| | |
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| Performance Study of the Anti-Scatter Grid for Sub-Megavolt X-Ray Flash Radiography W.J. Liu, J. Liu and Z.Q. Xiao | 1994 |
| Effect of Compaction on the Surface Morphology of CuInSe₂ Thin Films X. Yuan, Y.L. Wang and J.G. Xu | 1998 |
| Thermodynamic Properties and Optimized Fiber-Drawing Condition in Germanium Tellurite Glasses F.F. Fu, Y. Lei, J. Yang, Z.Q. Wang, X. Zhao and H. Lin | 2002 |
| The Study on Surface Morphology and Residual Stress of Al₂O₃ Film Y.D. Pu, W. Tang and Y.T. Yang | 2006 |
| Synthesis and Surface Photoelectric Properties of a Trinuclear Chromium(III) Complex Z.F. Shi, J.M. Li, Y.Z. Yin, L. Zhang, N. Huang and R.Y. Feng | 2010 |
| Hydrothermal Preparation of Flower-Like CuS Superstructure and its Optical Property B.R. Jia, M.L. Qin, A.M. Chu, Y. Liu, Q.P. Kang and X.H. Qu | 2014 |
| Investigation on the Properties of Sb-Doped CdTe Thin Films S. Feng, R.P. Li, L. Tian, K. Zou and Y.S. Liu | 2018 |
| Characterization of Defects in Gallium Nitride Thin Films by SEM A.H. Jiang, H.Y. Jiang, H. Zhao and J.R. Xiao | 2023 |

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| Experimental Study on Work Performance of Waste Rubber Concrete X.C. Wang, C.F. Yang and M. Yang | 2051 |
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