

Program of the
VI School of Young Scientists
"Advanced High Entropy Materials"

October 02-03, 2024 г.

Belgorod State National Research University
State Marine Technical University

Format of the School of Young Scientists – online

02.10.2024 WEDNESDAY
(Time: GMT+3)

Chairmen: Salishchev G.A., Zherebtsov S.V.

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| 10:00 | <u>Salishchev G.A.</u> | Practical Application Of High-Entropy Materials | Belgorod State University, Belgorod, Russian Federation |
| 10:25 | <u>Yurchenko N.Yu.</u> | Refractory High-Entropy Superalloys: Current Status And Future Trends | State Marine Technical University, St. Petersburg, Russian Federation |
| 10:50 | <u>Trofimov E.A.</u> | Recent Progress In Development Of Promising High-Entropy Materials | South Ural State University, Chelyabinsk, Russian Federation |
| 11:15 | <u>Zadorozhny V.Yu.</u> | Hydrogen Interaction Features Of The Multi-Principal-Component Hydride-Forming Alloys | National University of Science and Technology MISIS, Moscow, Russian Federation |

11:40-12:00 Coffee break

Chairman: Zadorozhny V.Yu., Panov D.O.

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| 12:00 | <u>Stepanov N.D.</u> | Design of structural metallic materials for additive manufacturing | State Marine Technical University, St. Petersburg, Russian Federation |
| 12:25 | <u>Zherebtsov S.V.</u> | Models Of Microstructure Evolution During Deformation And Heat Treatment Of Two-Phase Titanium Alloys | State Marine Technical University, St. Petersburg, Russian Federation |

12:50-14:00 Lunch

Chairman: Yurchenko N.Yu., Klimova M.V.

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| 14:00 | <i>Luchin A.V.</i> | Microstructure, Phase Composition And Mechanical Properties Of (Fe₄₀Mn₄₀Co₁₀Cr₁₀)_{100-x(N)_x Medium-Entropy Alloy} | Institute of Strength Physics and Materials Science of Siberian Branch Russian Academy of Sciences, Tomsk, Russian Federation |
| 14:15 | <i>Panina E. S.</i> | Structure, Mechanical Properties, And Oxidation Behaviour Of Refractory Nbtizrx (X = V, Mo, Ta) | Belgorod State University, Belgorod, Russian Federation |

| Complex Concentrated Alloys | | | |
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| 14:30 | <i>Klimova M.V.</i> | Effect of process parameters of wire-arc additive manufacturing on structure and properties of low-alloy | State Marine Technical University, St. Petersburg, Russian Federation |
| 14:45 | <i>Povolyaeva E.A.</i> | Cryogenic Mechanical Properties Of A Medium Entropy $Fe_{0.5}Co_{12.5}Ni_{12.5}Cr_{9.5}C_{0.5}$ Alloy Produced By Laser-Based Powder Bed Fusion | Belgorod State University, Belgorod, Russian Federation |
| 15:00 | <i>Tkachev E.S.</i> | Creep Behavior And Microstructural Changes In High-Chromium Martensitic Steels Subjected To Thermo-Mechanical Treatment | Belgorod State University, Belgorod, Russian Federation |
| 15:15 | <i>Astapov D.O.</i> | Temperature Dependence Of Mechanical Properties In CoCrFeMnNi And CoCrNi Alloys | Tomsk State University, Tomsk, Russian Federation |
| 15:30 | <i>Savina Y.N.</i> | Comparative Results Of Computer Modelling Of TiVZrCrAl High-Entropy Coating Deposition And The Experiment | Ufa University of Science and Technology, Ufa, Russia |
| 15:45 | <i>Nozdracheva E.I.</i> | Structure, Mechanical Properties, And Oxidation Resistance Of Lightweight Al-Cr-Ti-Fe-Mn | Belgorod State University, Belgorod, Russian Federation |
| 16:00-16:30 Coffee break | | | |
| <i>Chairmen: Naumov S.V., Salishchev G.A.</i> | | | |
| 16:30 | <i>A.S. Nifontov</i> | The Effect Of Age-Hardening On Hydrogen Embrittlement Of High Entropy Cantor Alloy | Institute of Strength Physics and Materials Science, Siberian Branch of Russian Academy of Sciences, Tomsk, Russian Federation |
| 16:45 | <i>Semenyuk A.O.</i> | Effect Of Nitrogen And Vanadium On Structure And Mechanical Behavior Of High Entropy Co-Cr-Fe-Ni-Mn System | Belgorod State University, Belgorod, Russian Federation |

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| 17:00 | <i>Gurtova D.Yu.</i> | Thermal And Deformation Martensite Formation In The Medium-Entropy Alloy | Institute of Strength Physics and Materials Science, Siberian Branch of Russian Academy of Sciences, Tomsk, Russian Federation |
| 17:15 | <i>Klimenko D.N.</i> | Machine Learning-Based Prediction Of The Oxidation Rate Of High-Entropy Alloys | Belgorod State University, Belgorod, Russian Federation |
| 17:30 | <i>S. V. Naumov</i> | Laser Welding Of Ti-6Al-4V And Al-5Mg-Sc Alloys Using High Entropy Intermediate Layers | Belgorod State University, Belgorod, Russian Federation |

03.10.2024 THURSDAY

(Time: GMT+3)

Chairmen: Stepanov N.D

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| 10:00 | <i>Astafurova E.G.</i> | The Role Of Twinning And $\gamma \rightarrow \epsilon$ Martensitic Transformation In Strain Hardening Of Multicomponent Fe40Mn40Co10Cr10 And FeMnCoCrNi Alloys | Institute of Strength Physics and Materials Science of Siberian Branch Russian Academy of Sciences, Tomsk, Russian Federation |
| 10:25 | <i>Mironov S. Yu.</i> | “Superplastics” Material Flow During Friction-Stir Welding Observed By The “Stop-Action Technique” | Belgorod State University, Belgorod, Russian Federation |
| 10:50 | <i>Klimova-Korsmik O. G.</i> | Laser Processing Of The Stator Components Of A Gas Turbine Engine Made Of High-Temperature Nickel Alloys | State Marine Technical University, St. Petersburg, Russian Federation |
| 11:15 | <i>Evlashin S.A.</i> | Additive Manufacturing Of Dissimilar Alloys: From Global Trends To Skoltech Developments | Skolkovo Institute of Science and Technology, Moscow, Russian Federation |
| 11:40-12:00 Coffee break | | | |
| 12:00 | <i>Krysinina O. V.</i> | Ion-Plasma Coatings Based On High-Entropy Alloys: Synthesis, Structure, Properties | Institute of High Current Electronics of Siberian Branch of the Russian Academy of Sciences, Tomsk, Russian Federation |
| 12:25 | <i>Panov D.O.</i> | Structure And Mechanical Properties Of Gradient-Structured Metastable Stainless Steel Subjected To Post-Deformation Annealing | Belgorod State University, Belgorod, Russian Federation |

12:05-12:30 Coffee break

Chairman: Klimova-Korsmik O.G., Salishchev G.A.

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| 12:30 | <i>Shaysultanov D. G.</i> | Structure And Properties Of Gradient Medium-Entropy Material Obtained By Direct Laser | Belgorod State University, Belgorod, Russian Federation |
| 12:45 | <i>Sokolovsky V. S.</i> | The Effect Of Cellular Reaction On Mechanical Behavior And Microstructure Evolution Of β -Solidified γ -TiAl Based Alloy During Hot Deformation | Belgorod State University, Belgorod, Russian Federation |
| 13:00 | <i>Kuznetsova A.A.</i> | Vacuum-Free Electric Arc Synthesis Of Tantalum-Doped Higher Tungsten Boride | Tomsk Polytechnic University, Tomsk, Russia |
| 13:15 | <i>Ozerov M.S.</i> | Corrosion Resistance, Wear Resistance And Biocompatibility Of TiNbZr-Based Composites | Belgorod State University, Belgorod, Russian Federation |
| 13:30 | <i>Mirontsov V.V.</i> | Structure, Mechanical Properties, And Oxidation Behaviour Of Refractory (HfNbTaTiZrX)₈₄Si₁₆ (X = Mo; MoV; CrMoV) Complex Concentrated Alloys | Belgorod State University, Belgorod, Russian Federation |
| 13:45 | <i>Borisov S.I.</i> | Correlation Between Microstructure And Yield Strength Of High-Strength Steel Subjected To Quenching And Partitioning Heat Treatment | Belgorod State University, Belgorod, Russian Federation |
| 14:00 | <i>Chernichenko R.S.</i> | Effect Of Gradient Structure On Mechanical Behavior Of Ti-Stabilized Austenitic Steel | Belgorod State University, Belgorod, Russian Federation |
| 14:15-15:00 Lunch | | | |
| 15:00-18:00 Workshop | | | |

| POSTER SESSION | | | |
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| 1. | Brazhnikov I.S. | EFFECT OF QUENCHING TEMPERATURE ON LOW-CYCLE FATIGUE AT ROOM TEMPERATURE OF 10%CR STEEL WITH HIGH BORON CONTENT | Belgorod State National Research University, Belgorod, Russia |
| 2. | Astakhov I.I. | CRACKING BEHAVIOUR OF NIKEL-BASED SUPERALLOY DURING DIRECT LASER DESPOSITION | Belgorod State University, Belgorod, Russian Federation |
| 3. | Zhilina M. A. | INVESTIGATION OF THE STRUCTURE, MECHANICAL PROPERTIES, AND OXIDATION RESISTANCE OF REFRACTORY MEDIUM-ENTROPY ALLOYS $AlX(NbTiZr)_{100-X}$ (X= 10; 25; 40 at%) | Belgorod State University, Belgorod, Russian Federation |
| 4. | Assanova E. | BCC-FCC PHASE TRANSFORMATION VIA HYDROGENATION OF THE ALLOYS IN Ti-V-Zr-Nb-Ta-Hf SYSTEM | National University of Science and Technology MISIS, Moscow, Russian Federation |
| 5. | Poliakov M.V. | INFLUENCE OF MAGNETRON SPUTTERING REGIMES ON THE STRUCTURE AND PROPERTIES OF THIN HIGH ENTROPY FILMS CoCrFeNiCu | G. Merzhanov Institute of Structural Macrokinetics and Problems of Materials Science, Russian Academy of Sciences, Chernogolovka, Russian Federation |
| 6. | Tuchina K. S. | STRENGTH AND OXIDATION RESISTANCE OF LAVES PHASE-CONTAINING REFRACTORY Nb-Ti-Zr-Cr ALLOYS: EFFECT OF CHEMICAL COMPLEXITY | Belgorod State University, Belgorod, Russian Federation |
| 7. | Degtyareva S.I. | POSITIVE INFLUENCE OF INCREASING QUENCHING TEMPERATURE ON THE CREEP RESISTANCE OF HIGH-CHROME STEEL WITH LOW NITROGEN CONTENT AND HIGH BORON | Belgorod State University, Belgorod, Russian Federation |