

CV

PERSONAL DETAILS

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EDUCATION

- 2015 **Candidate of Technical Sciences in scientific specialty 05.02.10 - Welding, similar processes and technologies**
The academic degree of Candidate of Technical Sciences was awarded by the decision of the Dissertation Council established on the basis of the Ural Federal University named after the First President of Russia B.N. Yeltsin on December 23, 2014 and diploma KND No. 014996 was issued by the order of the Ministry of Education and Science of the Russian Federation No. 1518/nk-1 dated December 4, 2015.
- 2010 – **Postgraduate studies in the scientific specialty Welding, similar processes and technologies**
2014 Perm National Research Polytechnic University, Perm, Russia.
- 2011 – **Additional qualification - teacher of higher education.**
2012 Perm National Research Polytechnic University. Diploma of additional (to higher) education PPK 168013 dated June 25, 2012.
- 2008 – **Master's degree in Engineering and Technology in the field of "Technological Machines and Equipment"**
2010 Perm State Technical University. Diploma VMA 0117859 dated June 09, 2010.
- 2004 – **Bachelor of Engineering and Technology in the field of "Technological Machines and Equipment"**
2008 Perm State Technical University. Diploma VBA 0355455 dated June 16, 2008.

PROFESSIONAL EXPERIENCE

- 09.2020 - to present **Associate Professor (Materials Science, Welding Production)**
Department of Materials Science and Nanotechnology, Belgorod State University (BSU), Belgorod, Russia.
- 02.2021-2023 **Senior Researcher (Materials Science)**
Laboratory of Bulk Nanostructured Materials BSU, Belgorod, Russia.
- Economic contract with LLC "Sudislavsky Plant of Welding Materials" dated 22.12.2021 No.1 (head of the contract);
 - Priority-2030 project (project participant).
- 01.2020 – 02.2021 **Junior Researcher (Materials Science)**
Laboratory of Bulk Nanostructured Materials BSU, Belgorod, Russia.
Projects:
- Project on "Selective laser sintering of high-entropy alloys of Fe-Cr-Co-Ni-C system with TWIP/TRIP effect" (project participant). Customer: Russian Science Foundation. 20-79-10093. 2020-2023.
 - Project on "Promising alloys and technologies for aerospace industry" (project participant). Customer: Russian Science Foundation. 19-79-30066. 2019-2022.
- 02.2019-05.2020 **Professor (Materials Science)**
Department of Operation of Armored Vehicles, Perm Military Institute, Perm, Russia.
- 09.2015 – 12.2019 **Associate Professor (Welding)**
Department of Welding Production, Metrology and Technology of Materials, Perm National Research Polytechnic University, Perm, Russia.
Projects:
- Project "Research of plasma electric arc granulation processes of mineral raw materials of the Ural region for submerged arc welding consumables" (Project Manager). 18-33-00599. 04.2018-03.2020.
- Additional:
- Since 2015, working as an academic secretary of the Council of Young Scientists and Specialists of PNRPU, Perm, Russia.
 - Organization of student and other non-academic events: All-Russian scientific and practical conference of young scientists with international participation "Mathematics and interdisciplinary research - 2019". Russia, Perm region, Perm, Perm State University, 05.2019. International Scientific and Technical Conference "Welding and Control", dedicated to the 130th anniversary of the invention of N.G. Slavyanov electric arc welding with a fusion electrode, Perm region, Perm, PNRPU, 09.2018.
- 09.2015-03.2020 **Engineer / Lecturer (Welding Production)**
West-Ural Certification Center (NAKS), Perm, Russia. Certificate number: SVR-4GAC-III-00177. Type of activity: teaching and certification. Certification area: Boiler equipment, Metallurgical equipment, Oil and gas production equipment, Equipment of chemical, petrochemical, oil refining and explosion and fire hazardous industries, Lifting and transportation equipment, Building structures.

- 09.2011-09.2015 **Assistant (Welding Production)**
Department of Welding Production and Technology of Structural Materials, Perm National Research Polytechnic University, Perm, Russia.
Additional:
- Russian Government scholarship from September 01, 2012 (by order of the Ministry of Education and Science of the Russian Federation on October 29, 2012 № 874) for the 2012/2013 academic year.
- 09.2009-09.2015 **Engineer (Welding Production)**
Department of Welding Production and Technology of Structural Materials, Perm National Research Polytechnic University, Perm, Russia.
Additional:
- Welding materials development project (R&D) U.M.N.I.K. "Technology and organization of production of welding materials from raw materials of Perm region". (Project Manager). Customer: Foundation for Assistance to Small Innovative Enterprises in Science and Technology. 11227. 03.2010-03.2012.

TEACHING EXPERIENCE

- 09.2022- to present **Academic disciplines:**
- Modern technologies of casting, welding, metal forming (lectures, practical and laboratory classes), 1 semest.
- 09.2020-09.2023 **Academic disciplines:** Department of Materials Science and Nanotechnology, BSU, Belgorod, Russia.
- Technology and equipment of thermal, chemical-thermal and deformation-heat treatment (lectures, practical classes), 2020-2022, 2nd semester.
 - Physical Foundations of Welding (lectures, practical classes), 2020-2022, 1 semester.
 - Materials Science (15.03.06 Mechatronics and Robotics).
 - Materials Science and Technologies of Modern and Advanced Materials (22.04.01 Materials Science and Technologies of Materials).
 - Future structural and functional materials (22.04.01 Materials science and technologies of materials).
- 09.2011-12.2019 **Academic disciplines:**
Department of Welding Production, Metrology and Technology of Materials, Perm National Research Polytechnic University, Perm, Russia.
- Computer technologies in mechanical engineering (lectures, practical classes),
 - Mathematical methods in engineering (lectures, practical classes),
 - Materials science and materials composites (lectures, practical classes, laboratory works),
 - Materials science and technology of structural materials (lectures, practical classes, laboratory works),
 - Methodology of scientific research (lectures, practical classes).
 - Management of industrial practice.
 - Management of graduate qualification works - bachelor's theses and master's theses.

02.2019-
05.2020

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Academic disciplines:

Institute (Technical Support), Department "Operation of Armored Vehicles", Perm Military Institute, Perm, Russia.

- Materials science,
- Technology of structural materials
- Management of graduate qualification works.

PROFESSIONAL SKILLS

1. Project activities:

- Writing and submitting applications for R&D project funding;
- R&D project management and administration;
- Writing reports, articles, patents based on the results of R&D project activities.

2. Research and Development activities:

- Microstructural studies: ETD-BSE-analysis, EDAX-microanalysis, EBSD-analysis, mapping.
- Welding-technological tests (RD 03-613-03);
- Tests of mechanical properties (according to GOST 6996-66);
- Structure research (scanning electron microscopy, petrographic analysis, X-ray analysis, metallographic analysis);
- Study of physical properties (dilatometric analysis);
- Laser granulometric analysis;
- Statistical analysis of test results, mathematical data analysis, qualitative and quantitative image analysis;
- Software packages (COMSOL Multiphysics Femlab, MathCAD, КОМПАС-3D, Adob photoshop & acrobat, MS excel & word & powerpoint).

- mastered areas of research activity:

- Development of welding technology for alloys based on orthorhombic titanium aluminide Ti₂AlNb: laser welding (LBW), diffusion welding (DW), plasma welding (K-PAW), electron-beam welding (EBW), TIG welding, electric resistance welding (ERW).
- Development of technology for producing hardened stainless-steel billets.
- Study of applicability of natural and technogenic mineral raw materials of the Ural region for creation of welding materials (coated electrodes, welding fluxes, flux cored wires);
- Welding metallurgy, methods of quality control of welds and welding materials;
- Welding of structural steels;
- Development of mineral raw material granulation methods;
- Study of the solid component of welding aerosols;
- Development of universal combined armor plates.

3. Educational activities

- management and review of research graduate qualification works of postgraduate students, master's students, specialists and bachelors;
- development of discipline courses, teaching materials, training programs;

- organizing and running specialized competitions, schools and conferences.

AWARDS

- Was awarded the medal of the winner of the Volga Federal District "Ulyanovsk - 2010" (Ulyanovsk, Russia 2010),
- Awarded a medal in the nomination "The best research work of a graduate student" (St. Petersburg, Russia 2012),
- Prize-winner in the nomination of the contest "Young Scientists" (Metal-Expo, Moscow, Russia 2012), laureate in the nomination of the competition of scientific and innovative projects of students, postgraduates and young scientists (MIPT, Moscow, Russia 2012),
- Winner of the contest "Young Scientist of the Year" in the field of technical sciences of the Perm National Research Polytechnic University (Perm, Russia 2014),
- Was awarded a commendation from V.N. Korotayev, Vice-Rector for Science and Innovations of PNRPU, for conscientious work in the Council of Young Scientists and Specialists (PNRPU, Perm, Russia 2018),
- Was awarded the gratitude from the Dean of the Faculty of Mechanics and Mathematics PSU for the great contribution to the development of interdisciplinary and interuniversity relations and expert evaluation of works at the All-Russian Scientific and Practical Conference of Young Scientists with International Participation "Mathematics and Interdisciplinary Research - 2019" (PSU, Perm, Russia 2019).

PUBLICATIONS

- Submerged Arc Welding Using Slag Base of West Urals Mineral Raw Resources with Low Detrimental Impurities Content / **S. V. Naumov**, A. M. Ignatova, M. N. Ignatov // Procedia Engineering. - 2017. - Vol. 206 : International Conference on Industrial Engineering, ICIE 2017. - P. 1355-1359. – doi:10.1016/j.proeng.2017.10.644
- Development of slag base for welding fluxes from man-made mineral formations of ural mining and smelting companies / **S. V. Naumov**, M. N. Ignatov, A. M. Ignatova, A. O. Artemov // High Technology: Research and Applications 2016 : [sel., peer rev. papers from the 5th Intern. Science and Engineering Conf. High Technology: Research and Applications 2016 (HTRA, Tomsk Polytechnic University, Russia, December 5-7, 2016)]. / Trans Tech Publications Inc. - Pfaffikon : TTP, 2017. - P. 406-410. - (Key engineering materials, ISSN 1662-9795 ; Vol. 743).
- Technology of mineral raw materials granulation by electric arc for manufacturing of welding fused flux / **S. V. Naumov**, M. N. Ignatov, M. A. Sheksheev // Materials Engineering and Technologies for Production and Processing III. ICIE-2017 : [sel., peer rev. papers from the Intern. Conf. on Industrial Engineering (May 16-19, 2017, St.-Petersburg, Russ. Federation)]. / Trans Tech Publications Inc. - Zurich : TTP, 2017. - P. 290-295. - (Solid State Phenomena, ISSN 1012-0394, Vol. 265).
- Composition development and production technology of stone casting silicate materials and items / A. Artemov, M. Ignatov, A. Ignatova, **S. Naumov** // High Technology: Research and Applications 2016 : [sel., peer rev. papers from the 5th Intern. Science and Engineering Conf. High Technology: Research and Applications 2016 (HTRA, Tomsk Polytechnic University, Russia, December 5-7, 2016)]. / Trans Tech Publications Inc. - Pfaffikon: TTP, 2017. - P. 401-405. (Key engineering materials, ISSN 1662-9795 ; Vol. 743).

- Investigation of viscosity of liquid welding slags and melts of electrode coatings / S. V. Mikhailitsyn, M. A. Sheksheev, S. I. Platov, A. N. Emelyushin, **S. V. Naumov** // Izvestiya Vysshikh Uchebnykh Zavedenij. Chernaya Metallurgiya. - 2018. - Vol. 61, № 4. - P. 280-287.
- Research on Plasma Electric Arc Granulation Processes of the Ural Region Mineral Raw Materials to Welding Materials for Submerged Arc Welding / **S. V. Naumov**, A. O. Artemov, K. I. Belousov // Materials Science and Metallurgical Technology : [Intern. Russ. Conf. on Materials Science and Metallurgical Technology (RusMetalCon 2018), October 1-4, 2018]. / Trans Tech Publications Inc. - Zurich : TTP, 2019. - P. 945-949. - (Materials Science Forum, ISSN 1662-9752 ; vol. 946).
- Special features of fused welding flux granular forming in carbon steel surfacing during plasma granulation / **S. V. Naumov**, A. O. Artemov, M. N. Ignatov, K. I. Belousov // IOP Conference Series: Materials Science and Engineering [Electronic resource]. - 2019. - Vol. 510. - Art. 012013. 5 p. – doi:10.1088/1757-899X/510/1/012013.
- Specifics of highly concentrated heat source influence on stone casting of technogenic and mineral raw materials / A. O. Artemov, **S. V. Naumov**, M. N. Ignatov, M. F. Kartashev // IOP Conference Series: Materials Science and Engineering [Electronic resource]. - 2019. - Vol. 510. - Art. 012002. 5 p. – doi:10.1088/1757-899X/510/1/012002.
- Technology and Equipment for Plasma Electric Arc Granulation of Fused Welding Flux / A. O. Artemov, **S. V. Naumov**, M. N. Ignatov // Materials Science and Metallurgical Technology : [Intern. Russ. Conf. on Materials Science and Metallurgical Technology (RusMetalCon 2018), October 1-4, 2018]. / Trans Tech Publications Inc. - Zurich : TTP, 2019. - P. 389-394. - (Materials Science Forum, ISSN 1662-9752 ; vol. 946).
- Study of Welding Properties of Fused Weld Flux Produced by Electric Arc Granulation / M. F. Kartashev, **S. V. Naumov**, A. N. Urchenko, M. A. Sheksheev // IOP Conference Series: Materials Science and Engineering [Electronic resource]. - 2019. - Vol. 511. - Art. 012034. 6 p. – doi:10.1088/1757-899X/511/1/012034.
- Obtaining welding materials of various structures, fractional and chemical composition using plasma granulation / **S.V. Naumov**, A.O. Artemov, M.F. Kartashev, M.A. Sheksheev // IOP Conf. Ser.: Mater. Sci. Eng. 2020, 758, 012055. – doi:10.1088/1757-899X/758/1/012055.
- Investigation of process for producing carbide-containing welding fused fluxes using plasma granulation / A.O. Artemov, **S.V. Naumov**, M.N. Ignatov, D.S. Belinin // IOP Conf. Ser.: Mater. Sci. Eng. 2020, 758, 012054. – doi:10.1088/1757-899X/758/1/012054.
- Petrographic Study of Welding Slags / M.A. Sheksheev, S.V. Mikhailitsyn, A.B. Sychkov, V.A. Bigeev, **S.V. Naumov** // Russian Metallurgy (Metally), Vol. 2020, No. 6, pp. 659–661. – doi: 10.1134/S0036029520060166.
- Cracking of Ti2AlNb-based alloy after laser beam welding / D.O. Panov, **S.V. Naumov**, V.S. Sokolovsky, E.I. Volokitina, N. Kashaev, V. Ventzke, R. Dinse, S. Riekehr, E.A. Povolyaeva, E.B. Alekseev, N.A. Nochovnaya, S.V. Zherebtsov, G.A. Salishchev // IOP Conf. Series: Materials Science and Engineering, 1014 (2021) 012035. – doi:10.1088/1757-899X/1014/1/012035.
- Excellent strength-toughness synergy in metastable austenitic stainless steel due to gradient structure formation / D.O. Panov, R.S. Chernichenko, **S.V. Naumov**, A.S. Pertcev, N.D. Stepanov, S.V. Zherebtsov, G.A. Salishchev // Materials Letters 303 (2021) 130585. – doi:10.1016/j.matlet.2021.130585.

- Effect of pre-heating and post-weld heat treatment on structure and mechanical properties of laser beam-welded Ti₂AlNb-based joints / D. Panov, **S. Naumov**, N. Stepanov [et al.] // Intermetallics. – 2022. – Vol. 143. – P. 107466. – DOI 10.1016/j.intermet.2022.107466.
- Effect of Cold Swaging on the Bulk Gradient Structure Formation and Mechanical Properties of a 316-Type Austenitic Stainless Steel / D. Panov, R. Chernichenko, E. Kudryavtsev [et al.] // Materials. – 2022. – Vol. 15. – No 7. – DOI 10.3390/ma15072468.
- Gradient Microstructure and Texture Formation in a Metastable Austenitic Stainless Steel during Cold Rotary Swaging / D.O. Panov, E. Kudryavtsev, **S. Naumov**, A. Pertsev [et al.] // Materials. – 2023. – Vol. 16. – P. 1-16. – DOI 10.3390/ma16041706.
- Structure and mechanical properties of welded joints from alloy based on VTI-4 orthorhombic titanium aluminide produced by pulse laser welding / **S.V. Naumov**, D.O. Panov, R.S. Chernichenko, V.S. Sokolovsky [et al.] // Izvestiya Non-Ferrous Metallurgy. – 2023. – Vol. 29 (2). – P. 1-16. – DOI 10.17073/0021-3438-2023-2-57-73.

PATENTS

- Patent RU 2448824. Ignatov M.N., Ignatova A.M., **Naumov S.V.** Powder for obtaining welding fusion flux.
- Patent RU 2494847. Ignatov M.N., Ignatova A.M., **Naumov S.V.** Method of flux granulation.
- Patent RU 2497646. Ignatov M.N., Ignatova A.M., **Naumov S.V.** Mineral alloy for welding electrode coatings.
- Patent RU 2504465. Ignatov M.N., Ignatova A.M., **Naumov S.V.** Electrode coating.
- Patent RU 2680031. Kartashev M.F., **Naumov S.V.**, Ignatov M.N., Ignatova A.M. Method of flux granulation.
- Patent RU 2716344 **Naumov S.V.**, Artemov A.O., Shchitsyn Y.D., Ignatova A.M., Belousov K.I. Method of obtaining granulated welding flux.
- Patent RU 2749815 Panov D.O., **Naumov S.V.**, Pertsev A.S., Kudryavtsev E.A., Simonov Y.N., Salishchev G.A. Method of obtaining hardened blanks of fasteners from stainless austenitic steel.
- Patent RU 2744292 Panov D.O., **Naumov S.V.**, Sokolovsky V.S., Zherebtsov S.V., Salishchev G.A., Povolyaeva E.A., Kashaev N.S., Ventzke F., Dinse R., Riekehr S. Method of laser welding of alloys based on orthorhombic titanium aluminide Ti₂AlNb.
- Patent RU 2769190 Kartashev M.F., **Naumov S.V.**, Artemov A.O., Mindibaev M.R. Method of welding flux granulation.
- Patent RU 2770107 Kartashev M.F., **Naumov S.V.**, Artemov A.O., Mindibaev M.R. Machine for granulation of welding flux.
- Patent RU 2782370 Panov D.O., Chernichenko R.S., **Naumov S.V.**, Kudryavtsev E.A., Pertsev A.S., Salishchev G.A. Method of obtaining hardened billets from non-magnetic stainless austenitic steel.
- Patent RU 2787279 Panov D.O. **Naumov S.V.**, Kudryavtsev E.A., Pertsev A.S., Salishchev G.A. Method of obtaining hardened cylindrical billets from austenitic class stainless steel.

CONFERENCE PARTICIPATION

- International Scientific and Technical Conference "Perspective Technologies and Materials", I International Scientific and Practical Conference INNOTECH 2009, I International Scientific and Practical Conference "Young Scientists of the Kama Region - 2011" (Perm 2008-2011); 6th International Scientific and Practical Conference "Quality of Science - Quality of Life" (Tambov 2010); 5th International Scientific and Technical Conference "Modern Problems of Mechanical Engineering" (Tomsk 2010).
- International Conference "Research of materials using methods of thermal analysis, calorimetry and gas sorption" (St. Petersburg 2012); All-Russian youth scientific-practical conference with international participation "Engineering thought of machine building of the future" (Ekaterinburg 2012); Interuniversity mobility "Scientific and scientific-pedagogical personnel of innovative Russia" (Novosibirsk 2012). Scientific technical conference "Welding and diagnostics" within the framework of the specialized exhibition "Welding. Control and Diagnostics" (Ekaterinburg 2012); XIX working group "Aerosols of Siberia" (Tomsk 2012); All-Russian scientific conference of young scientists "Science. Technologies. Innovations" (Novosibirsk 2012).
- International Scientific and Technical Conference "Welding and Control - 2013" dedicated to the 125th anniversary of the invention of electric arc welding with melting electrode by N.G. Slavyanov (Perm 2013). Anniversary Scientific and Practical Seminar "Welding Metallurgy and Welding Materials" dedicated to the 100th anniversary of the scientist G.L. Petrov (St. Petersburg 2013).
- Seminars and reports on the results of joint work and research at the Leibniz University of Hannover (Germany, Hannover 2010-2011). Leibniz University of Hannover (Hannover, Germany 2010-2011).
- XVI International Scientific and Technical Conference "Welding and Related Technologies" (Ekaterinburg 2016); V International Scientific and Technical Conference of Young Scientists, Postgraduates and Students "High Technologies in Modern Science and Engineering" (Tomsk 2016); International Scientific and Technical Conference "Prom-Engineering 2017" (St. Petersburg 2017); XVII Regional Conference "Welding and Related Technologies" (Ekaterinburg 2017).
- International Scientific and Technical Conference "Welding and Control" dedicated to the 130th anniversary of N.G. Slavyanov's invention of electric arc welding with a melting electrode (Perm 2018); International Conference "Materials Science and Metallurgical Technologies" Rusmetalcon-2018 (Chelyabinsk 2018); VII International Scientific and Technical Conference of Young Scientists, Postgraduates and Students "High Technologies in Modern Science and Technology" (Tomsk 2018).
- 7th International Conference on Mechanical Engineering, Materials Science and Civil Engineering ICMEMSCE2019 (Sanya, China 2019).
- 78th International Scientific and Technical Conference "Actual Problems of Modern Science, Technology and Education" (Magnitogorsk 2020). International Conference and School of Young Scientists "Obtaining, structure and properties of high-entropy materials" (Belgorod 2020).
- 5th All-Russian Scientific and Practical Conference with international participation "Innovative Technologies in Materials Science and Engineering - ITMM-2021" (Perm 2021), III International Conference and School "Synthesis, structure, and properties of high-entropy materials" (Ekaterinburg 2021). 79th International

Scientific and Technical Conference "Actual problems of modern science, technology and education" (Magnitogorsk 2021).

- IV International Conference and School "Advanced High Entropy Materials" (Chernogolovka 2022). International Scientific and Practical Conference "Materials Science, Molding Technologies and Equipment 2022" ICMSSTE 2022 (Yalta 2022). 6th All-Russian Scientific and Practical Conference with international participation "Innovative Technologies in Materials Science and Mechanical Engineering - ITMM-2022" (Perm 2022). 80th International Scientific and Technical Conference "Actual problems of modern science, technology and education" (Magnitogorsk 2022).
- 13th International Symposium "Powder Metallurgy: Surface Engineering, New Powder Composite Materials. Welding" (Minsk, Belarus 2023). International Scientific and Technical Conference dedicated to the 135th anniversary of N.G. Slavyanov's invention of electric arc welding with a fusion electrode (Perm 2023).