The 16th Sino-Russia Symposium on Advanced Materials and Technologies

Conference Manual

The Nonferrous Metals Society of China

6th-13th, November, 2023

Haikou, Beijing, China

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1. Conference Notice

1.1 Delegates attending the meeting are kindly requested to comply with the conference schedule, be punctual, and during the sessions, please turn off or set your mobile phones to silent mode.

1.2 Please wear your credentials when entering and exiting the venue.

1.3 Simultaneous translation service will be provided during the meeting. Please scan the code to listen, and kindly bring your own headphones.

1.4 Delegates who equire long-distance phone, internet or fax services in their rooms, as well as other in-room expenses, are advised to contact the hotel front desk and settle the charges by themselves.

1.5 Conference Venue

Sheraton Haikou Hotel

(136 Binhai Avenue, Haikou, Hainan Province, China)

Beijing Railway Hotel

(102 Haidian District, Beijing, China)

1.6 Conference contacts

Huanzhi Gao-13811402047 Fang Li-15727373609 Pu Yin-13601241299

Financial contacts：Cui Feng-13520962843 Yueming Pang-15010359809

Interpreter：Guangxun Liu-13601130961

2. Conference Organizers

Chinese Organizers

Hosts

The Nonferrous Metals Society of China

China GRINM Group Corporation Limited

China Nonferrous Metal Mining (Group) Co., Ltd.

Co-Organizers

BGRIMM Technology Group

Chinese Materials Research Society

The Chinese Society for Metals

Chinese Society of Aeronautics and Astronautics

Henan University of Science and Technology

Shaanxi University of Technology

Sino-Platinum Metals Co.,Ltd.

Supports

Chinese Academy of Engineering

China Nonferrous Metals Industry Association

Russian organizers

Russian Academy of Sciences

Baikov Institute of Metallurgy and Materials Science Russian Academy of Sciences

Tekhma, Ltd.

Supports

Rusatom Metallurgical Technologies, LLC

3. Organizing Committee Members

Chinese Organizing Committee Members

Organizing Committee of the Conference

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Wei Fan		

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Lianmeng Zhang	Xiaowei Huang	Fusheng Pan
Zuoren Nie	Shou Peng	Shaoming Dong
Xiating Feng	Pingxiang Zhang	Liyuan Chai
Zhengchang Shen	Tao Jiang	Zhengyi Fu

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Wei Sun	Jian Sun	Zhou Li
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Yutao Zhao	Jingming Zhong	Fushun Xu
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Renguo Guan	Tianying Xiong	Baiqing Xiong
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Prof. Urlichich Yu.M., Dr. Sc. (Eng), Prof. Yusupov V.S., Ph.D.,

Associate Professor Prygaev A.K., PhD (Eng) Strelnikova S.S.,

General Director, Co Ltd RosatomMetalTech Adrianov A.N.,

Project Director Domov A.I.

Working group

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Dr. Sc. (Phys-Math) Simakov S.V., PhD (Phys-Math) Vinogradova

N.A.,PhD (Eng) Fomina O.N., PhD (Chem) Shumilkin N.S.,

PhD (Phys-Math) Nikitushkina O.N., PhD (Eng) Prosvirnin D.V.,

PhD (Eng) Komolova O.A., Dormidonton N.A.

4、Event Schedule

Date	Time	Agenda	Location
November 6th	9:00-22:00	Delegate Registration	Hotel Lobby
November 7th-8th	9:00-11:50	Academic Session	The Wuzhou Conference Room on the second floor
	14:00-17:20	Academic Session	The Wuzhou Conference Room on the second floor
November 9th	9:00-17:20	Poster session	The Wuzhou Conference Room on the second floor
November 10th	9:00-17:20	Discussion Session, youth outstanding paper award presentation	The Wuzhou Conference Room on the second floor
November 11th	9:00-21:00	Departure to Beijing	
November 12th	10:00-17:20	Discussion Session	No.12, Fuxing Road B, Haidian District, Beijing
November 13th	10:00-15:30	Excursion of production facilities and laboratories, closing ceremony	No.12, Fuxing Road B, Haidian District, Beijing

5、Conference Agenda

★Time: November 7th, 2023

★Location: The Wuzhou Conference Room on the second floor

Time	Content
Moderator: MingxingJia , Vice Chairman of the Chinese Organizing Committee and President of the Nonferrous Metals Society of China	
9:00-9:30	**Opening ceremony** 1.Speech given by Honglin Ge, Chairman of the Chinese Organizing Committee and President of China Nonferrous Metals Industry Association 2.Speech given by Vladimir S. Komlev, Chairman of the Russian Organizing Committee, corresponding member RAS 3.Speech given by Xiaochen Zhao, Vice Chairman of the Chinese Organizing Committee and Chairman of China GRINM Group Corporation Limited 4.Speech given by Wei Fan, Deputy General Manager of China Nonferrous Metal Mining (Group) Co., Ltd. 5.Speech given by Long Han, Chairman of BGRIMM Technology Group
9:30-9:50	Group photo and tea break
Moderator（China）:Chuanyao Sun, Academician of Chinese Academy of Engineering Moderator（Russia）:Prof. Dr. Andrey A. Rempel，Academician of Russian Academy of Sciences	
9:50-10:20	Progress of Er-containing aluminum alloys in marine applications

	——Zuoren Nie (Beijing University of Technology)
10:20-10:50	Designing New Materials for Catalysis with Artificial Intelligence ——Valentine P. Ananikov（Russian Academy of Sciences）
10:50-11:20	Preparation of Silicon Carbide Composite Powders and the Integrated Additive Manufacturing Technology for Its Complex Ceramic Components ——Yusheng Shi (Huazhong University of Science and Technology)
11:20-11:50	New methods of analysis and optimization of steel production technologies ——Konstantin V. Grigorovich（Russian Academy of Sciences）
12:00-13:30	Lunch and lunch break
Moderator（China)：Dingfan Qiu，Academician of Chinese Academy of Engineering Moderator（Russia）：Prof. Dr. Konstantin V. Grigorovich，Academician of Russian Academy of Sciences	
14:00-14:30	Synergistic leaching of scheelite concentrate under atmospheric pressure　by a sulfuric-phosphoric acid mixture ——Zhongwei Zhao（Central South University）
14:30-15:00	Nanoporous titanium dioxide for photocatalysis and photosorption ——Andrey A. Rempel（Russian Academy of Sciences）
15:00-15:30	Research and Development Progress of High Performance Aerospace Titanium Alloys ——Xianghong Liu（Northwest Institutefor Non-ferrous Metal Research）
15:30-15:50	Tea break
15:50-16:20	High-purity rare-earth metals for studying the magnetocaloric effect in a wide range of magnetic fields

	——Natalia B. Kolchugina（Baikov Institute of Metallurgy and Materials Science of the Russian Academy of Sciences）
16:20-16:50	Computational simulation of mineral interface chemistry based on quantum theory ——Jianhua Chen（Guangxi University）
16:50-17:20	Multicomponent mimetics of extracellular matrix in the tissue engineering and regenerative medicine ——Yulia B. Basok（Shumakov National Medical Research Center of Transplantology and Artificial Organs）
18:30-20:30	Dinner Buffet

★Time: November 8th, 2023

★Location: The Wuzhou Conference Room on the second floor

Time	Content
Moderator（China）：Shizhong Wei，President of Zhengzhou University of Light Industry Moderator（Russia）：Prof. Alexander K. Prygaev，Dean of the Faculty of Mechanical Engineering, National University of Oil and Gas «Gubkin University» (Gubkin University)	
9:00-9:30	Next Generation PEM Fuel Cell Catalysts：from Fundamental Research to Product Development ——Rongyue Wang（GRINM (Guangdong) Institute for Advanced Materials and Technology）
9:30-10:00	Mechanical properties and strain hardening of low-alloyed and stainless steels for piping at elevated temperatures ——Igor Yu. Pyshmintcev（Russian Research Institute for the Tube and Pipe Industries）
10:00-10:30	Deformation behavior and microstructure evolution of Nb521 niobium alloy Nb521——Baohui Zhu（China Nonferrous Metal Mining (Group) Co., Ltd.）
10:30-10:50	Tea break
10:50-11:20	New high strength Cu-matrix conductors with Cu-Nb microcomposites as strengthening elements ——Viktor Pantsyrny（Rusatom Metallurgical Technologies, LLC）
11:20-11:50	Challenges and Development Progress of Mn-Based Cathode Materials ——Jun Wang(BGRIMM Technology Group)
12:00-13:30	Lunch and lunch break
Moderator（China）：Lifeng Zhang，President of North China University of Technology	

Moderator（Russia）：Dr. Igor Yu. Pyshmintcev，General director of Russian Research Institute for the Tube and Pipe Industries, Director of TMK Research LLC	
14:00-14:30	Studies on Friction Stir Additive Manufacturing of CuCrZr Based Alloy ——Aleksandr Vopneruk（R&D Enterprise “Mashprom”, JSC）
14:30-15:00	Research progress in precious metal high-temperature materials ——Yan Wei(Sino-Platinum Metals Co.,Ltd.)
15:00-15:30	Design for Creating Large-Tonnage Production of Permanent Magnets in the Russian Federation ——Domov Alexander（Rusatom Metallurgical Technologies, LLC）
15:30-15:50	Tea Break
15:50-16:20	Development Status and Reflection on Silicon-based Materials in China ——Yingsheng Huang（China ENFI Engineering Corporation）
16:20-16:50	Peculiarities of phase equilibria in the Li-containing oxide systems involving polyfunctional materials ——Grigorii A. Buzanov（Kurnakov Institute of General and Inorganic Chemistry of the Russian Academy of Sciences）

★Time:November 9th,2023

★ Location: The Wuzhou Conference Room on the second floor

★Content: Poster session

Time	Content
9:00-12:00	Moderator（China）：Shizhong Wei，President of Zhengzhou University of Light Industry Moderator（Russia）：Prof. Alexander K. Prygaev，Dean of the Faculty of Mechanical Engineering, National University of Oil and Gas «Gubkin University» (Gubkin University)
	Poster session
12:00-13:30	Lunch
13:30-17:20	Moderator（China)：Dingfan Qiu，Academician of Chinese Academy of Engineering Moderator（Russia）：Prof. Dr. Konstantin V. Grigorovich，Academician of Russian Academy of Sciences
	Poster session

Posters

China:

1. Development and Application of Numerical Simulation Technology of 3D Printing
Huazhong University of Science and Technology
2. Strategies for synergistic strengthening of B4C/TC11 titanium matrix composites by Fe microalloyingNanjing Tech University
3 .Exploration of microstructure modification for laser additive manufacturing titanium alloys
Nanjing Tech University
4. A multi-objective optimization of laser cladding processing parameters of AlCoCrFeNi2.1 eutectic high-entropy alloy coating
Institute of New Materials,Guangdong Academy of Sciences
5. In-situ synthesis and wear mechanism of Ni- based self-lubricating composite coating with a dense continuous metal sulfide layer prepared by laser cladding
Institute of New Materials,Guangdong Academy of Sciences

6. Novel effective photocatalytic self-cleaning coatings: TiO2-PFA coatings prepared by suspension plasma spraying

Institute of New Materials,Guangdong Academy of Sciences

7. Tribological properties of MoS2/a-C:Si composite films under high- temperature air and vacuum environments

Institute of New Materials,Guangdong Academy of Sciences

8. Prediction techniques for shrinkage and porosity during solidification of Be-Al alloy

CNMC NingXia Orient Group Co.,Ltd

9. Regulation of primary phase in Cu-Cr-Zr alloy and its effect on nano-structure and properties

Jiangxi University of Science and Technology

10.Stability of the metastable β'-Cu4Ti phase in Cu–Ti alloys: Role of the Ti content

Jiangxi University of Science and Technology

11. First-principles Insights into the Selective Separation of MoS42 and WO42: Crucial Role of Hydration StructuresCentral South UniversityWuhan University of Science and Technology

12. Optimized the Sulfate-phosphoric Mixed Acids to Improve the Performance of Vanadium Redox Flow Battery

Wuhan University of Science and Technology

13. Extraction of vanadium(V) from a vanadium-bearing shale leachate by Hydroxixime through bifunctional coordination

Wuhan University of Science and Technology

14. Reinforced adsorption mechanism of fluorine ions by calcium-depleted hydroxyapatite and application in the raffinate from the vanadium industry

Wuhan University of Science and Technology

15. Research on microwave enhanced vanadium extraction of vanadium-bearing shale

Wuhan University of Science and Technology

16. Enhancing separation of vanadium and iron selectivity from acid-leaching solution with sulfamic acid modified resin

Wuhan University of Science and Technology

17. Surface Modification of Biomass with Di-(2-Ethylhexyl)phosphoric Acid and Its Use for Vanadium Adsorption

Wuhan University of Science and Technology

18. Effect of mechano-chemical activation on improved acid leaching of vanadium-bearing shale

Wuhan University of Science and Technology

19. Thermodynamic calculation and experimental investigation of NiCr-Cr3C2 coating prepared by detonation spray

Hunan Research Institute of Metallurgy and Materials Co., Ltd.

20. Capillary assisted self-assembly and nascent hydrogen reduction of graphene oxide on Al: Formation of C-O-Al bonds under mild condition

Dalian Jiaotong University

21. Development and Application of Numerical Simulation Technology of 3D Printing

Huazhong University of Science and Technology

22. Numerical Simulation on Entrapment of Inclusions during Electroslag Remelting

Process

North China University of Technology

23. Application of rare earth metal-ferroalloys in special steels

North China University of Technology

24. Effect of Ca treatment on sulfide inclusion of high-strength low-alloy steel

North China University of Technology

25. Microstructure and mechanical properties of in-suit TiC reinforced Inconel 718 through addition of Ti2AlC

School of Materials Science & Engineering, Tianjin University, Tianjin 300354, P R China

26. Improving creep properties of TLP-bonded Ni3Al-based superalloy with heat treatment

School of Materials Science & Engineering, Tianjin University, Tianjin 300354, P R China

Russia：

1. SiO_2 PRECURSORS FOR SI-BASED NEGATIVE ELECTRODE MATERIALS FOR LiON BATTERIES

Abramova E.N., Nedoluzhko A.I., Abakumov A.M.

2. INFLUENCE OF GRAPHENE SHEET CONTENT ON THERMAL EXPANSION OF ZrO_2 NANOPOWDERS

Asya AFZAL, Elena TRUSOVA

3. GADOLINIUM-BASED NANOSIZED PHOSPHORS ACTIVATED BY TERBIUM FOR MEDICAL APPLICATIONS

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5. POSSIBILITY OF DAMPING THROUGH THE USE OF DIFFERENT STEELS AND ALLOYS

Iurii S. Dubinov, Oksana Yu. Elagina, Olga B. Dubinova, Artem A. Bereznyakov, Victoria A. Fedorova., Alexander K. Kuznetsov

6. CHANGING THE TECHNOLOGICAL PROPERTIES OF MATERIALS BY CONDUCTING THERMOMAGNETIC TREATMENT

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7. MAGNETIC FORCE MICROSCOPY OF THE DOMAIN STRUCTURE OF HIGH-COERCIVITY (Nd-R)-Fe-B (R = Pr, Ce, Dy, Tb, Ho) PERMANENT MAGNETS

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54. EFFECT OF ZEOLITE TYPE ON ACTIVITY OF MoS_2/Al_2O_3-Z CATALYSTS IN HYDROCONVERSION OF METHYLPALMITATE

Yiheng Zhao

55. INTERACTION OF DISLOCATIONS WITH VOIDS IN TUNGSTEN: A MOLECULAR DYNAMICS STUDY

Arseniy KAZAKOV, Elena KORZNIKOVA, Dmitriy TERENTYEV, Alexandery ZINOVEV

56. COMBUSTION SYNTHESIS OF Ti_3SiC_2/SiCP CERAMIC PLATES USING TITANIUM FOILS AS A REACTANT

Istomin P.V., Istomina E.I., Nadutkin A.V., Grass V.E.

57. SINTERING OF REFRACTORY CARBIDE POWDERS CHEMICALLY MODIFIED BY SILICIDING WITH SiO GAS

Belyaev I.M., Istomin P.V., Istomina E.I., Nadutkin A.V., Grass V.E.)

58. FABRICATION AND SINTERING OF C/SiC CORE-SHELL COMPOSITE FIBERS

Istomina E.I., Istomin P.V., Nadutkin A.V., Grass V.E.

59. SYNTHESIS OF SILICON CONTAINING MAX PHASES (Si-MAXs) THROUGH THE VACUUM CARBOSILICOTHERMIC REDUCTION PROCESS

Istomina E.I., Istomin P.V., Nadutkin A.V., Grass V.E., Belyaev I.M., Baeva O.G., Morokhina A.O.

60. FEATURES OF THE RECOVERY OF AUSTENITIC STAINLESS STEEL OBTAINED BY SELECTIVE LASER MELTING

Dolzhenko Pavel, Odnobokova M., Mikhailov M., Tikhonova M., Belyakov A., and Kaibyshev R.

★Time: November 10th, 2023

★ Location: The Wuzhou Conference Room on the second floor

★Content: Discussion session

Time	Content
9:00-12:00	Moderator（China）： Huanzhi Gao, The Nonferrous Metals Society of China
	Discussion Sessions for Young Researchers
12:00-13:30	Lunch
13:30-17:20	Moderator（China）：Hongguo Zhang, Chief Supervisor of the Nonferrous Metals Society of China
	Youth Outstanding Paper Award Presentation

★Time: November 12th, 2023

★ Location: No.12, Fuxing Road B, Haidian District, Beijing

★Content: Discussion session

Time	Content
9:00-17:20	Moderator（China）: Hongguo Zhang, Chief Supervisor of the Nonferrous Metals Society of China
	Discussion Sessions for Researchers

★Time: November 13th, 2023

★ Location: No.12, Fuxing Road B, Haidian District, Beijing

★Content: Excursion of production facilities and laboratories, closing ceremony

Time	Content
9:00-12:00	Moderator（China）： Huanzhi Gao, The Nonferrous Metals Society of China
	Excursion of production facilities and laboratories
12:00-13:30	Lunch
14:00-15:30	Moderator（China）：Hongguo Zhang, Chief Supervisor of the Nonferrous Metals Society of China
	Closing ceremony 1. Speech by Mingxing Jia, Vice Chairman of the Chinese Organizing Committee and president of the Nonferrous Metals Society of China 2. Speech given by Vladimir S. Komlev, Chairman of the Russian Organizing Committee, corresponding member RAS; Prof. Dr. Konstantin V. Grigorovich，Academician of Russian Academy of Sciences

6、Speaker Biography

Prof. Zuoren Nie, a member of Chinese Academy of Engineering and president of Beijing University of Technology.

Dr. Zuoren Nie is a member of Chinese Academy of Engineering (CAE), professor and President at Beijing University of Technology. Dr. Nie currently serves as the vice chairman of Chinese Materials Research Society (C-MRS) and Nonferrous Metals Society of China (NFsoc), vice director of National Standardization Committee for Carbon Dioxide Peaking and Carbon Neutrality, vice director of the Materials Science Department of Science and Technology Committee of Chinese Ministry of Education, the committee member of the Global Alliance for Life Cycle Assessment (LCA) Centers, and the regional editor for the International Journal of Life Cycle Assessment. Dr. Nie has engaged in teaching and research work in the fields of non-ferrous metal metallurgy and materials processing for many years, devoting himself to the friendly development of the whole life cycle of materials. These contributions have been disseminated in the form of more than one hundred Chinese, U.S. and Japanese patents, and over three hundreds SCI articles.Owing to his extraordinary contributions, Dr. Nie has been awarded the prizes of National Award for Science and Technology for five times (the first accomplisher two times). He has been entitled as a National Excellent Scientist and a leading talent in the national "Ten Thousand Talents Program", and awarded the National Labour Medal. He also received the National Science Fund for Distinguished Young Scholars and was approved as "extra best".

Academician of Russian Academy of Sciences Prof. Dr. Valentine P. Ananikov
Elected Member of European Academy “Academia Europaea”

Head of Laboratory, Zelinsky Institute of Organic Chemistry Russian Academy of Sciences

h-index = 63, times cited = 14,317 (Web of Science; author = Ananikov V*)
h-index = 71, times cited = 18,403 (Google Scholar; https://scholar.google.com/citations?user=V2bwOqsAAAAJ)

PROFESSIONAL EXPIRIENCE

2019: Academician of Russian Academy of Sciences

2012 - present: Professor, Chemistry Department, Moscow State University

2009 - present: Head, Division of Structural Studies, Zelinsky Institute of Organic Chemistry

2008: Elected Member of Russian Academy of Sciences

2005 - present: Head, Laboratory of Transition Metal and Nanoparticle Catalysis, Zelinsky Institute of Organic Chemistry

2004 - 2005: Leading Scientist

2000 - 2003: Researcher of Zelinsky Institute of Organic Chemistry

1996 - 1999: Ph.D. Student, Russian Academy of Sciences

EDUCATION

2003: Habilitation (Doctorate of Science in Organic Chemistry), Moscow, Russia.

1999: Ph.D in Organic Chemistry, Zelinsky Institute of Organic Chemistry, Moscow, Russia.

1996: Masters of Science in Biochemistry.

RESEARCH INTERESTS

Catalysis, Nanotechnology, Organic Synthesis. Mechanistic studies, molecular complexity and transformations. Transition-metal-catalyzed transformations towards application in organic chemistry.

Yusheng Shi, Distinguished Professor at Huazhong University of Science and Technology

Dr. Shi has been engaged in the field of additive manufacturing (AM) for 25 years and devoted his expertise to the advanced preparation and forming techniques of high-performance polymeric, metallic, and ceramic materials for AM. He is a Distinguished Professor at Huazhong University of Science and Technology. He serves as Chair of the AM Branch of Non-ferrous Metals Society of China, Chair of the AM Materials Branch of the Chinese Materials Research Society, Director of the Expert Committee of the AM Technology Center of China Aerospace Science and Technology Corporation, etc.

Dr. Shi has developed 63 types of materials for AM, including nylon, polyether ether ketone, high-strength aluminum alloys, iron base hard surface alloys, and silicon carbide, which were used for fabricating over 30,000 polymeric, 500 metallic, and 10,000 ceramic components. The performances of these components are highly competitive with some superior to the reported international advanced level. He has been granted 324 patents and published 9 books and 704 papers. He was listed among the "Top 2% Scientists in the World" by Stanford University and recognized as one of the top contributors in Cross-Field in China in 2022.

Dr. Shi has played a pivotal role in establishing several significant research platforms, including the National and Local Joint Engineering Laboratory of Digital Material Processing Technology and the Engineering Research Center of AM Ceramic Materials of the Ministry of Education, China. Through these platforms, he has nurtured and mentored eight national-level talents including a Changjiang Distinguished Professor. His team was recognized as “the world's most influential organization in the laser-AM field in 2018 (ranked 1st)” by Virtual and Physical Prototyping, a top international journal, and complimented

as "has affected other countries such as Singapore, South Korea, and the United States" in the authoritative Wohlers Report on AM. He won the Second Prize of National Technology Invention Award in 2011 (ranked 1st), the Second Prize of National Science and Technology Progress Award (2018, ranked 1st; 2001, ranked 3rd), Top 10 Sci-tech Achievements in China in 2011 and Top 10 Sci-tech Achievements in Intelligent Manufacturing in 2020 (both ranked 1st), nine First Prizes of the provincial and ministerial level Scientific Research Awards (five of them ranked 1st), National Pioneer in Innovation Award in 2023 and Nomination for Top 10 National Outstanding Scientific and Technological Workers in 2012, etc.

Academician of Russian Academy of Sciences Prof. Dr. Konstantin V. Grigorovich Head of Laboratory, Baikov Institute of Metallurgy and Materials Science of the Russian Academy of Sciences.

Doctor of Technical Sciences, Professor, Academician of the Russian Academy of Sciences-Konstantin Grigorovich -Head of the Laboratory of the A.A. Baikov Institute of Metallurgy and Materials Science RAS is a specialist in the field metallurgy of steels and alloys and diagnostics of materials, author of more than 400 scientific works, including 2 monographs, 4 patents, 1 computer program.
Main scientific results:
- New thermodynamic data were obtained on the properties of oxygen, nitrogen, and sulfur in melts based on iron, nickel and cobalt, a number of thermodynamic constants were obtained, included in reference books and cited in international publications.
- A new method of fractional gas analysis (FGA), physical and chemical models, mathematical algorithms and software for this method have been developed. The method has received international recognition, has been installed in analytical instruments and has been successfully used to monitor the purity of steels based on non-metallic inclusions. Using mathematical modeling and the FGA, a new original method for analyzing and optimizing out-of-furnace steel processing technologies has been developed.
For a number of the most important steels, the new technologies for ladle processing, deoxidation, micro-alloying and modification have been theoretically and experimentally substantiated and implemented at the metallurgical enterprises in Russia for steels for railway rails and wheels, steel cord, gas pipelines, steels for nuclear and thermal energy have been implemented. For the development and industrial development of technologies and equipment for the

production of steel structures for nuclear and thermal energy, K. V. Grigorovich in 2014. was awarded the title of Laureate of the Government of the Russian Federation in the field of science and technology. For a series of works on the topic: Development of physical and chemical foundations and technical solutions for pure steel production technologies in 2019, he was awarded the I.P. Bardin RAS for outstanding work in the field of metallurgy.

- For steels for transport purposes, purity criteria for non-metallic inclusions have been formulated, and new parameters have been established for predicting the operational durability of rails. The developed criteria and control method are included in GOST R 51685-2014 “Railway Rails”, interstate standards and are used at all metallurgical enterprises of the countries of the economic commonwealth that produce rails.

Since 2000 Grigorovich K.V. has been teaching as the head of the Department of Metallurgy of Steel and Ferroalloys, and since 2016, a professor at NUST MISIS. Under his leadership, 15 candidate's theses and more than 40 diploma and master's theses were defended.

Grigorovich K.V. is the editor-in-chief of the journal "Metals", a member of the editorial boards of the journals: "Melts", "Factory Laboratory - Diagnostics of Materials", "Issues of Materials Science", "Izvestia of Universities Ferrous Metallurgy".

Prof. Zhongwei Zhao, Central South University

Zhongwei Zhao was born in September 1966in Handan, Hebei Province. He is a doctor of engineering, professor and doctoral supervisor.

Zhongwei Zhao is a vice chairman of the Academic Committee on Rare Metals Metallurgy of the Nonferrous Metals Society of China and a member of the Committee on Physical Chemistry of Metallurgical Processes of the Chinese Society for Metals. He is the director of the Key Laboratory of Hunan Province for Metallurgy and Material Processing of Rare Metals.

Zhongwei Zhao mainly focuses on the metallurgy of critical metals and has been engaged in the theoretical and technological research on the metallurgy of rare metals for more than 30 years. In order to utilize tungsten resources in China efficiently, he proposes the theory and technology for deep utilization of complex tungsten ores, the mixed sulphur-phosphorus acid method for decomposing low-grade co-associated tungsten ores and theselective precipitation method for removing molybdenum from tungstate solution. He proposes the electrochemical deintercalation/intercalation method to separate magnesium and lithium ions, which provides important support for the utilization of lithium resources in salt lakes.

Zhongwei Zhao is awarded the First Prizeof the State Scientific and Technological Progress Awardonce (ranked 1st) and the Second Prize of the State Technological Invention Award twice (ranked 1stand 4th, respectively). He wins China Patent Gold Award once (ranked 1st) and the First Prize of China Nonferrous Metals Industry Science and Technology Award three times (ranked 1st). He has 106 granted invention patents (5 international patents) and has published a book entitled Tungsten Metallurgy: Fundamentals and Applications.

Zhongwei Zhao win the Prize of Scientific and Technological Progress of Ho Leung Ho Lee Foundation. He is awarded the title of “National Outstanding Professional and Technical Talents” and “National Outstanding Science and Technology Workers”. He wins the National Pioneer Innovation Award and a National May 1 Labor Medal. He is selected as a State-level Candidate of the "National Hundred, Thousand and Ten Thousand Talent Project in the New Century”. He is awarded the title of “Hunan Exemplary Sci-tech Workers” and wins the Hunan Guangzhao Science and Technology Award.

Academician of Russian Academy of Sciences Prof. Dr. Andrey A. Rempel
Director of Institute of Metallurgy of the Ural Branch of the Russian Academy of Sciences, Ekaterinburg, Russia

Andrey Andreevich Rempel was educated at the Ural Federal University in Ekaterinburg in Russian Federation, receiving a diploma of Engineer-Physicist in 1981. He got PhD degree in physics and mathematics (1984), habilitation in physics and mathematics (1997) at the Institute of Solid State Chemistry of the Ural Branch of the RAS. Since 2002 he is full professor in Ural Federal University. Since 2019 he is full member of the Russian Academy of Sciences. In the period from 1991 to 2001 totally about three years he was Alexander von Humboldt Fellow and Max-Planck Society Honorary in Stuttgart University, Germany. In the period from 2002 to 2005 totally about one year he was working in Studiumcentrum voor Kernenergie, Mol, Belgium. In the period from 2003 to 2016 totally about half a year he was invited professor in Graz Technical University. In the period from 2000 to 2009 he was visiting professor in University of Erlangen-Nuremberg, Germany.
He has about 400 scientific publications. He gives about 100 talks at scientific meetings, his Hirsch index is 33. He is currently (since 2018) Director of the IMET UB RAS.

Xianghong Liu, Deputy Chief Engineer of the Northwest Institute for Non-ferrous Metal Research

Dr. Xianghong Liu, Deputy Chief Engineer in Northwest Institute for Non-ferrous Metal Research. He has been engaged in the research and development of high-performance titanium alloys for over twenty years, and is one of the academic leaders in related fields in China. His team has made a series of breakthroughs in the manufacturing technology of advanced aerospace titanium alloys, solved one of the bottleneck problems of the new-generation aircraft and aero-engines, and significantly improved the development and application levels of high-performance titanium alloys in China. He has presided over a number of international cooperation projects and national key research projects and published more than 150 journal papers and 120 invention patents. He has won a dozen of awards from the Ministry of National Science and Technology, the Commission of Science and Technology and Industry for National Defense, the Nonferrous Metals Industry Association of China, and the Science and Technology Bureau of Shaanxi Province. He also has won honorary titles such as "National Outstanding Professional and Technical Personnel" and "National Model Worker".

Dr. Sci. Natalia B. Kolchugina
Head of Laboratory, Baikov Institute of Metallurgy and Materials Science of the Russian Academy of Sciences.

Natalia B. Kolchugina is a graduate of the Moscow Institute of Fine Chemical Technology and received her PhD and Doctor Sci. in Engineering from the Baikov Institute of Metallurgy and Materials Science, Russian Academy of Sciences and is currently lead researcher and Chief of Laboratory at the Institute. She has more than 70 scientific publications and a number of patents to her name and is particularly interested in the materials science of high purity rare earth metals, alloys based on them, single crystals and phase diagrams of rare earth metal systems. Now her interests also are in designing and studying rare-earth-based hard magnetic materials and permanent magnets for various applications.

The interests of the laboratory led by her are the materials science of (1) hard magnetic and magnetocaloric materials, (2) single-crystal refractory metals and alloy; (3) the platinum group metals, the development of advanced palladium-based materials for membrane diffusion elements, and the preparation of thin and ultra-thin membranes; and magnetic superconducting materials.

Prof. Jianhua Chen, Guangxi University

Professor of Guangxi University, doctoral supervisor. Selected in the New Century Outstanding Talents Support Program of the Ministry of Education, winner of the Guangxi Youth May Fourth Medal. Vice chairman of the Chinese Non-ferrous Metals Society mining process calculation and simulation committee, and the mining process interface chemistry committee, etc. Professor Chen is a pioneer in introducing advanced quantum chemical theory into the field of traditional mineral processing which created a groundbreaking research direction in the density functional theory of sulfide mineral flotation. He extends the traditional theory of coordination chemistry to the field of mineral flotation, constructs the hetero-coordination model of the interaction between flotation reagents and metal ions on mineral surfaces, and thereby establishes the theory of coordination chemistry in mineral flotation. In particular, he proposes the principle of chemical and physical assembly of flotation reagent molecules at the solid-liquid interface and develops a variety of green and efficient flotation reagents to realize efficient and clean recovery of complex polymetallic resources. Additionally, he has published over 400 papers and 9 academic monographs in academic journals by country, and authorized more than 30 national invention patents and 10 international invention patents.

Dr. of Biological Sciences Yulia B. Basok
Head of Biomedical Technology and Tissue Engineering Department, Shumakov National Medical Research Center of Transplantology and Artificial Organs, Russia

Dr. Yulia B. Basok is Head of Department for Biomedical Technology and Tissue Engineering, Shumakov National Medical Research Center of Transplantology and Artificial Organs, Moscow, Russia. Her line of work is connected with formation and characterization of biomaterials for regenerative medicine as well as developing tissue engineering constructs based on these products. Dr. Basok pioneered in the development of perfusion bioreactor for tissue engineering, decellularization of fragments of articular cartilage, liver and pancreas, and application of MSCs in treating diseases of the above-mentioned organs. She is engaged in formation of functionalized scaffolds by means of electrospinning and encapsulation of islets of Langerhans for transplantation. Her main scientific results are presented in more than 54 papers, and she has three Russian patents. She has been selected guest lecturer abroad and participates in international advisory boards.

Rongyue Wang, Deputy Director of the Fuel Cell Research Group at GRINM (Guangdong) Institute for Advanced Materials and Technology

Dr. Rongyue Wang is currently a Professorate Senior Engineer and Deputy Director of the Fuel Cell Research Group at GRINM (Guangdong) Institute for Advanced Materials and Technology. He received his Ph.D. from Shandong University (China) in 2012. He then worked successively at University of Waterloo (Canada), National Institute of Science and Technology (USA) and Argonne National Laboratory (USA) as a Postdoc. Then he worked as a Materials Scientist at Applied Materials Division of Argonne National Laboratory since 2019. His research interest is electrochemical energy conversion and storage including fuel cells, water electrolysis, and alkali metal batteries. He led multiple DOE and LDRD projects (>$2M grants awarded). He published 37 peer reviewed papers in prestige journals such as Energy & Environmental Sciences, Advanced Materials etc. He authored two book chapters and 27 patents and patent applications. He gave more than 30 talks at international and domestic conferences. He served as Youth Editorial Board Members for Renewables, and Rare Metals, served as Guest Editors for Frontiers in Chemistry, and Applied Sciences, served as Editorial Board member for Frontiers.

Dr. Igor Yu. Pyshmintcev
General director of Russian Research Institute for the Tube and Pipe Industries
Director of TMK company

Igor Yu. Pyshmintcev graduated from the Kirov Ural Polytechnical Institute getting specialty in Metallography and Technology of Heat Treatment in 1986.
From 1986 to 2012 Igor Pyshmintcev worked at the Heat Treatment and Physics of Metals Department with the Ural State Technical University as an engineer, assistant, associate professor and professor. He holds Doctor degree (1992) and Full Doctor degree (2004) in Metallography and Heat Treatment from Ural State Technical University.
Since 2003 he has been with the Russian Research Institute for the Tube and Pipe Industries as General director.
He was appointed to project Director of new research facility of TMK company as key partner of Skolkovo Foundation in 2013.
Director of TMK company for R@D since 2019.
Igor Pyshmintcev is a Corresponding Member of the Russian Academy of Natural Sciences and Honored employee of Industry of Tchelyabinsk region.
Main interests in microstructure and properties of high strength steels for different applications, currently for tubes and pipes.
Author of 332 publications including abstracts, articles, books and patents.
H-index 17.

Baohui Zhu, Senior engineer of China Nonferrous Metal Mining (Group) Co., Ltd.

Baohui Zhu (1977-), male, doctoral candidate, professor-level senior engineer. He is mainly engaged in the preparation and processing technology of rare metal materials, such as titanium, tantalum, niobium and their alloys. Since joining the work, he has developed more than 50 new products and published more than 60 papers. He presided over and participated in the formulation and revision of 6 national and industry standards. At the same time, he has obtained 11 authorized invention patents and won three provincial and ministerial science and technology progress awards.

Dr. Viktor Pantsyrny
Rusatom Metallurgical Technologies, LLC
Director on the development of the Wire Products Division
Doctor of Science

The main area of research is associated with the materials science of functional metal matrix composites, in particular, he was deeply involved in the development and industrial production in Russian Federation of the superconducting strands for International Project on Fusion reactor ITER. He is also the leader of the development of the new class of high strength high conductivity Cu-Nb microcomposite winding wires. On the base of his researches, the industrial production of a wide range of innovative electrotechnical products was established.

Jun Wang, Senior engineer of Beijing Easpring Material Technology Co., Ltd.

Dr. Jun Wang, is currently a senior engineer of Beijing Easpring Material Technology Co., Ltd (hereinafter referred to as “Easpring”). He has been engaged in research, development and industrialization of high energy density cathode materials after doctoral graduation from Beijing University of Chemical Technology in 2017. Up to now, he has published more than 10 papers, obtained 10 licensed patents. Easpring is a high-tech listed company focusing on research, development, production and sales of new energy materials. It takes the lead in exporting or sale high-performance cathode materials to global high-end lithium-ion battery companies, such as LG Chem, Samsung SDI, SKon, Sanyo, Sony, CATL, Lishen, BYD, CALB and etc. It has been recognized as National Technological Innovation Demonstration Enterprise, and National Accredited Enterprise Technology Center.

Aleksandr Vopneruk, PhD in Engineering
Project Manager of R&D Enterprise “Mashprom”, JSC

Dr. Vopneruk graduated from the Institute of New Materials and Technologies of Ural Federal University and has since worked at the R&D Enterprise “Mashprom”, JSC (hereinafter referred to as Mashprom) as a Researcher and Project Manager. He has been engaged in research and development on Thermal Spray coatings based on metastable austenite, Thermal Barrier Coatings (TBCs), Metal Matrix Composite (MMC) coatings and its industrial application to against cavitation, erosion, abrasive, corrosion, oxidation etc. In recent years, the researcher has focused on R&D and engineering in the field of Steelmaking, in particular the Continuous Casting of Steel.

More than 10 years collaborative studies with IMP UB RAS on MMC coatings and CuCrZr alloys resulted with research and development of several advanced technologies industrialized on Mashprom Production complex supporting by Ural Interregional Research and Education Center (UIREC) for Advanced Production Technologies and Materials.

Yan Wei, Senior Engineer (Professor level) of Sino-Platinum Metals Co.,Ltd.

Yan Wei, female, 39 years old.

- Member of the Communist Party of China.
- Professor level Senior Engineer of Sino-Platinum Metals Co.,Ltd.
- Doctoral degree obtained from Kunming University of Technology, doctoral supervisor of Kunming University of Science and Technology,
- Recipient of the "Yunnan Labor Day Medal".
- Awarded as Yunnan Province's "Ten Thousand Talents Plan" Youth Top Talents, Yunnan Province's Excellent Youth Project
- Awarded as Technological innovation talent of Yunnan Province.

Dr. Wei graduated from Tongji University in 2005 with a major in Materials Science and Engineering. In the same year, she was admitted to Kunming Institute of Precious Metals with a major in Materials Science. In 2008 she graduated with a master's degree and has since worked at the R&D Center of Sino-Platinum Metals Co.,Ltd, since then, she has been engaged in the research and engineering applications of high-temperature antioxidant coatings, ultra-high temperature structural materials. For a long time, Dr. Wei has been engaged in the research and development of precious metal platinum, rhodium, iridium based alloys, the preparation of precious metal iridium and platinum coatings, and the chemical vapor deposition of high-temperature new materials such as refractory metals rhenium, niobium, tantalum, tungsten, etc.

During the work period, she has undertaken and participated in more than 50 horizontal technology development projects at the national, provincial, and enterprise levels, including the National Natural Science Youth Fund project, the National Natural Science Foundation Regional Fund project, the Yunnan

Provincial Key Basic Research Project, the Yunnan Provincial Natural Science Foundation project, the Yunnan Provincial High tech Industry Development Special Project, and the Open Fund for Key Laboratories of the Ministry of Education Technical research project. And meanwhile published over 40 papers, participated in writing one monograph "Precious Metal New Materials", applied for 13 invention patents, formulated 3 national military standards and 2 enterprise standards.

Dr. Wei has won one First Prize and one Second Prize of China Nonferrous Metal Industry Science and Technology Award, one Second prize in Yunnan Provincial Natural Science Award and one Third prize in Yunnan Provincial Science and Technology Progress Award. And in 2018 she won The third National Non-ferrous Metal Outstanding Youth Science and Technology Award and the Second Prize of Outstanding Youth Engineer Award from the China Non ferrous Metals Society.

Dr. Wei's team, which was selected as the provincial "Rare and precious metal low-dimensional new material innovation team" , has made significant contributions to the discipline construction of Kunming Institute of Precious Metals, as well as to the development of new materials industry and the development of new materials industry for rare and precious metals in high-tech fields in Yunnan Province.

Dr. Domov Alexander
Head of project, Rusatom Metallurgical Technologies, LLC

The main direction is related to the implementation of the project to create large-scale production of rare-earth permanent magnets Nd-Fe-B with a capacity of 1000 tons per year.

Design work involves the production of a full cycle, starting from rare-earth oxides and to finished magnets for wind energy and other industries.

Yingsheng Huang, director of International Business of China ENFI Engineering Corporation

Yingsheng Huang holds Master’ s degree from Central South university of China, and now is director of International business of China ENFI. He worked for China ENFI since his graduation at year 2007, and continuously accumulates experiences in engineering and project management especially in international projects. He was involved in a variety of projects, including polysilicon, large scale mines and mineral processing, metals metallurgy for Nickel, Copper, and automatic system of those projects in Zambia, DRC, Guinea, Egypt and Indonesia.

Grigorii A. Buzanov, PhD (Inorg. Chem.)
Senior Research Officer, Laboratory of Light Elements and Cluster Chemistry, Kurnakov Institute of General and Inorganic Chemistry of the Russian Academy of Sciences

Grigorii A. Buzanov is currently a senior research officer at the N.S. Kurnakov Institute of General and Inorganic Chemistry of the Russian Academy of Sciences (IGIC RAS), Laboratory of Light Elements Cluster & Chemistry. Since graduation from M.V. Lomonosov Moscow State Academy of Fine Chemical Technology (2011), continued as a graduate student at IGIC RAS and obtained PhD degree in 2016. Major areas of research interest and fields of expertise include inorganic chemistry and synthesis, mechanochemistry, heterogenous phase equilibria in multicomponent oxide and hydride systems, thermal analysis and powder X-ray diffraction, development of novel approaches and precursors to the synthesis of functional materials. Headed several research projects of Russian Scientific Foundation, and the Grant of The President of The Russian Federation.

The Nonferrous Metals Society of China

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