ПРОГРАММА

XV Российско-Китайского Симпозиума

НОВЫЕ МАТЕРИАЛЫ И ТЕХНОЛОГИИ

16 – 19 октября 2019 г.
Россия, Сочи

Организаторы Симпозиума

Российский Фонд фундаментальных исследований
Отделение химии и наук о материалах Российской академии наук
Институт металлургии и материаловедения им. А.А. Байкова РАН
Федеральный научно-исследовательский центр
“Кристаллография и фотоника” РАН
Институт физики прочности и материаловедения СО РАН
ООО “Интерконтакт Наука”

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Инженерная Академия Китая
Академия Наук Китая
Китайская ассоциация промышленности цветных металлов
Общество цветных металлов Китая
Пекинский Центральный Институт цветных металлов

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Russian Foundation for Basic Research
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Baikov Institute of Metallurgy and Materials Science of RAS
Federal Research Center “Crystallography and Photonics” RAS
Institute of Strength Physics and Materials Science SB RAS
Intercontact Nauka ltd

———

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Chinese Academy of Sciences
China Nonferrous Metals Industry Association
The Nonferrous Metals Society of China
Beijing General Research Institute for Nonferrous Metals

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Программа по дням

<table>
<tr><th>15.10.</th><th colspan="2">16 октября</th><th colspan="2">17 октября</th><th colspan="2">18 октября</th><th>19.10.</th><th>20.10.</th></tr>
<tr><th>Вт.</th><th colspan="2">Среда</th><th colspan="2">Четверг</th><th colspan="2">Пятница</th><th>Суб.</th><th>Воскр.</th></tr>
<tr><td rowspan="6">14.00 – 24.00
Заезд участников</td><td colspan="2">9.00 – 10.00
Открытие</td><td rowspan="3">9.00 – 9.40
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Доклад 9
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Пленарное заседание
4 секция
Доклад 17
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Стендовая сессия Секция 4</td><td rowspan="6">9:00–12:00 Стендовая сессия молодых ученых. Закрытие Симпозиума. Подведение итогов конкурса молодежных научных докладов</td><td rowspan="6">Отъезд участников</td></tr>
<tr><td colspan="2">10.00 – 10.30
Фотографирование</td></tr>
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Панченко В.Я.</td></tr>
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Пленарное заседание
Доклад 10
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Перерыв</td><td>10.20 – 10.40
Перерыв</td></tr>
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Пленарное заседание
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Доклад 20
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<tr><td colspan="2">13.30 – 15.00
Обед</td><td colspan="2">12.30 – 14.00
Обед</td><td colspan="2">12.30 – 14.00
Обед</td></tr>
<tr><td rowspan="5">15.00-18.00
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Перерыв</td><td>15.20 – 15.40
Перерыв</td></tr>
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<tr><td colspan="2">18.00 – 19.30
ужин</td><td colspan="2">18.00 – 19.30
ужин</td><td colspan="2">19.00 – 21.30
Торжественный ужин</td></tr>
</table>

Daily program

<table>
<tr><th>15.10.</th><th colspan="3">October 16</th><th colspan="3">October 17</th><th colspan="3">October 18</th><th>19.10.</th><th>20.10.</th></tr>
<tr><th>Tuesday</th><th colspan="3">Wednesday</th><th colspan="3">Thursday</th><th colspan="3">Friday</th><th>Sat.</th><th>Sunday</th></tr>
<tr><td rowspan="6">14.00 – 24.00
Arrival of participants</td><td colspan="3">9.00 – 10.00
Symposium opening</td><td rowspan="3">9.00 – 9.40
Plenary session
Report 9
Gudilin E.A.</td><td rowspan="6">9.00 – 14.00
Poster session Section 2</td><td rowspan="3">9.00 – 9.40
Plenary session
Report 17
Kuznetsov S.A.</td><td rowspan="6">9.00-14.00
Poster session Section 4</td><td rowspan="6">9: 00-12: 00 Poster session of young scientists. Closing of the Symposium. Summarizing competition of youth scientific reports</td><td rowspan="6">Departure of participants</td></tr>
<tr><td colspan="3">10.00 – 10.30
Photographing</td></tr>
<tr><td colspan="3">10.30 – 11.10
Plenary session
Report 1
Panchenko V.Ya.</td></tr>
<tr><td colspan="3">11.10 – 11.50
Plenary session
Report 2
Tu Hailing</td><td>9.40 – 10.20
Plenary session
Report 10
Zhang Tingan</td><td>9.40 – 10.20
Plenary session
Report 18
Xia Dingguo</td></tr>
<tr><td colspan="3">11.50 – 12.10
Break</td><td>10.20 – 10.40
Break</td><td>10.20 – 10.40
Break</td></tr>
<tr><td colspan="3">12.10 – 12.50
Plenary session
Report 3
Nie Zuoren</td><td>10.40 – 11.20
Plenary session
Report 11
Chen Yanbin</td><td>10.40 – 11.20
Plenary session
Report 19
Ovcharenko V.E..</td></tr>
<tr><td colspan="3">12.50 – 13.30
Plenary session
Report 4
Komlev V.S.</td><td>11.20 – 12.20
Plenary session
Report 12
Alymov M.I.</td><td>11.20 – 12.20
Plenary session
Report 20
Liu Min</td></tr>
<tr><td rowspan="8">14.00 – 20.00 Registration of participants
19.00 Welcome dinner</td><td colspan="3">13.30 – 15.00
Lunch</td><td colspan="3">12.30 – 14.00
Lunch</td><td colspan="3">12.30 – 14.00
Lunch</td></tr>
<tr><td rowspan="6">15.00 – 15.40
Plenary session
Report 5
Huang Xiaowei</td><td rowspan="6">15.00-18.00
Poster session Section 1</td><td rowspan="6">14.00 – 14.40
Plenary session
Report 13
Gilmutdinov A.Kh.</td><td rowspan="6">14.00 – 18.00
Excursion</td></tr>
<tr><td rowspan="6">14.00 – 18.00
Poster session Section 3</td></tr>
<tr><td rowspan="5">15.40 – 16.20
Plenary session
Report 6
Kalin B.A.</td></tr>
<tr><td rowspan="5">14.40 – 15.20
Plenary session
Report 14
Zhu Minggang</td></tr>
<tr><td>16.20 – 16.40
Break</td><td>15.20 – 15.40
Break</td></tr>
<tr><td rowspan="2">16.40 – 17.20
Plenary session
Report 7
Zhang Pingxiang</td><td rowspan="2">15.40 – 16.20
Plenary session
Report 15
Kozyukhin S.A.</td></tr>
<tr><td rowspan="2">17.20 – 18.00
Plenary session
Report 8
Gribkov V.A.</td></tr>
<tr><td rowspan="2">16.20 – 17.00
Plenary session
Report 16
Huang Haiguang</td></tr>
<tr><td colspan="3">18.00 – 19.30
Diner</td><td colspan="3">18.00 – 19.30
Diner</td><td colspan="3">19.00 – 21.30
Diner
Summing up, rewarding</td></tr>
</table>

Пленарные доклады представляют
Plenary reports present

Панченко Владислав Яковлевич — *академик РАН, доктор физико-математических наук, профессор. Председатель Совета РФФИ. Специалист в области лазерной физики, нелинейной оптики, лазерно-информационных технологий, нанотехнологий и медицинской физики.*

Panchenko Vladislav Yakovlevich *— Academician of the Russian Academy of Sciences, Dr. Sci. (Phys. & Math.), professor. Chairman of the council of the Russian Foundation for Basic Research. Expert in the field of laser physics, nonlinear optics, laser information technology, nanotechnology and medical physics.*

Tu Hailing — *Academician of the Chinese Academy of Engineering, Dr. Sci. Honorary president of General Research Institute for Nonferrous Metals of Beijing (GRINM), director of science and technology committee of GRINM Group Co., Ltd. Expert in the field of fabrication and characterization of silicon, compound semiconductors and rare-earth materials, and research on defect engineering, surface and interface chemistry and nanomaterials for medical sensors, zirconium and hafnium compounds, two-dimensional tungsten and molybdenum sulfides, and their applications in electronics and aeronautics industries.*

Ту Хайлин — *Академик Инженерной Академии Китая, доктор наук. Почетный президент Центрального научно-исследовательского института цветных металлов (GRINM), директор научно-технологического комитета компании GRINM Group. Специалист в области получения кремния, полупроводниковых соединений и редкоземельных материалов, химии поверхности и границ раздела, разработки наноматериалов медицинского назначения, получения соединений циркония и гафния, двумерных сульфидов вольфрама и молибдена и их применения в электронике и авиакосмической промышленности.*

Nie Zuoren *— Academician of the Chinese Academy of Engineering, Dr. Sci., Beijing University of technology. Vice Chairman of Chinese materials research society, vice director of materials science department of Science and Technology Committee of Chinese Ministry of education. Fivefold winner the prizes of National Award for Science and Technology. Expert in non-ferrous metals, refractory metals, aluminum alloys metallurgy and processing, powder metallurgy, developing multi-component rare-earth tungsten alloys, micro-alloyed with Er aluminum alloys, recycling techniques for tungsten, cobalt and nickel powders.*

Не Цзожэнь *— Академик Инженерной Академии Китая, доктор наук, профессор. Пекинский технологический институт. Вице-председатель Китайского материаловедческого общества, вице-директор департамента материаловедения комитета по науке и технике Министерства образования Китая. Пятикратный лауреат национальных премий по науке и технике. Специалист в области металлургии и обработки цветных и тугоплавких металлов, алюминиевых сплавов, разработки многокомпонентных редкоземельных сплавов на основе вольфрама и микролегированных Er сплавов алюминия, методов переработки вольфрамовых, кобальтовых и никелевых порошков.*

Комлев Владимир Сергеевич — *член-корреспондент РАН, доктор технических наук, профессор. Директор Института металлургии и материаловедения им. А.А. Байкова Российской академии наук (ИМЕТ РАН). Лауреат премии Президента РФ в области науки и инноваций для молодых учёных (2011 г.). Специалист в области создания биосовместимых материалов медицинского назначения.*

Komlev Vladimir Sergeevich — *Corresponding member of the Russian Academy of Sciences, Dr. Sci. (Eng.), professor. Director of the Baikov Institute of metallurgy and materials science of the Russian Academy of Sciences (IMET RAS). Winner of the President Award for young scientists (2011). Expert in the field of creation of biocompatible medical grade materials.*

Huang Xiaowei — *Academician of the Chinese Academy of Engineering, Dr. Sci., professor. Chief expert of General Research and Technology Group Co., Ltd. (former GRINM), director of National Engineering Research Center for Rare Earth Materials, director of rare earth chemistry & hydrometallurgy committee of the Chinese Society of Rare Earths. Second prize winner of national technological invention award and national science and technology progress award, four-time the first prize of ministerial science and technology progress award. Expert in the field of rare earth metallurgy, green separation and purification of rare earths.*

Хуан Сяовэй — *Академик Инженерной Академии Китая, доктор наук, профессор. Главный специалист Центральной научно-исследовательской и технологической компании (бывший GRINM), директор Национального инжинирингового исследовательского центра по редкоземельным материалам, директор Комитета по химии и гидрометаллургии редкоземельных материалов. Лауреат национальных премий по науке и технике, техническим изобретениям, четырехкратный лауреат правительственной премии по развитию науки и техники. Специалист в области металлургии и "зеленых" технологий разделения и очистки редкоземельных материалов*

Калин Борис Александрович — *доктор физико-математических наук, профессор, заслуженный деятель науки и техники РФ, заслуженный работник высшей школы, заведующий кафедрой физических проблем материаловедения НИЯУ МИФИ. Лауреат премии Правительства РФ. Специалист в области радиационного материаловедения, разработки новых материалов конструкционного и функционального назначения.*

Kalin Boris Aleksandrovich — *Dr. Sci. (Phys. & Math.), professor, Honored worker of science and technology of the Russian Federation, Honored worker of Higher School, Head of the Department of physical problems of materials science, National Research Nuclear University "MEPhI". Winner of the Prize of the Government of the Russian Federation. Expert in the field of radiation materials science, development of new materials for structural and functional purposes.*

Zhang Pingxiang — *Ph.D, professor. President of Northwest Institute for nonferrous metal research, member of the National Advisory Committee of experts on new materials industry development, vice-director of the Chinese materials research society, director of the Technical Committee on superconducting materials, and vice-president of the Nonferrous Metal Society of China. Twice winner of the second prize of National technological inventions award, fivefold winner of the first prize of Provincial and Ministerial Science and Technology Award. Expert in the field of fabrication techniques of low-temperature and high-temperature superconductors, application of superconducting materials.*

Чжан Пинсян — *Доктор наук, профессор. Президент Северозападного института цветных металлов, член национального консультативного комитета по новым материалам, вице-директор Китайского материаловедческого общества, директор технического комитета по сверхпроводящим материалам, вице-президент Китайского общества цветных металлов. Неоднократный лауреат Национальных премий по техническим изобретениям и провинциальных и правительственных премий по науке и технике. Специалист в области технологии получения и практического применения низко- и высокотемпературных сверхпроводниковых материалов.*

Грибков Владимир Алексеевич — *доктор физико-математических наук, профессор, ведущий научный сотрудник ИМЕТ РАН. Лауреат Государственной премии СССР (1986 г.). Специалист в области разработки и применения мощной лазерной техники и установок типа "Плазменный Фокус", изучения сильноточных разрядов и пучков заряженных частиц для моделирования лазерного термоядерного синтеза, диагностики плазмы, применения рентгенотехники и мощных импульсных источников проникающих излучений в радиационной физике, материаловедении, химии, биологии и медицине.*

Gribkov Vladimir Alekseevich — *Dr. Sci. (Phys. & Math.), professor, leading researcher of IMET RAS. Winner of the USSR State Prize (1986). Expert in the field of development application of powerful laser technology and Plasma Focus-type installations, study of high-current discharges and charged-particle beams for simulation of laser fusion, plasma diagnostics, use of X-ray technology and powerful pulsed sources of radiation in radiation physics, materials science, chemistry, biology and medicine.*

Гудилин Евгений Алексеевич — *член-корреспондент РАН, доктор химических наук, профессор. Зам. декана факультета наук о материалах МГУ. Специалист в области разработки методов получения и исследования свойств высокотемпературных сверхпроводников (ВТСП) на основе купратов бария и редкоземельных элементов, материалов с эффектом колоссального магнетосопротивления.*

Gudilin Evgeny Alekseevich — *Corresponding member of the Russian Academy of Sciences, Dr. Sci. (Chem.), professor. Deputy dean of the Faculty of materials science of Lomonosov Moscow State University. Expert in the field of development of methods for the preparation and study of the properties of high-temperature superconductors based on barium cuprates and rare-earth elements, materials with the effect of colossal magnetoresistance.*

Zhang Tingan — *Ph.D., professor. Head of School of materials and metallurgy of the Northeastern University, director of the Institute of special metallurgy and process engineering, librarian of Northeastern University. Expert in the field of metallurgy process and technology, alumina production with non-traditional resources, metallurgy reactor and self-propagation high-temperature synthesis, calcification-carbonation method for red mud treatment.*

Чжан Тинань — *Доктор наук, профессор. Руководитель Школы по материалам и металлургии Северовосточного университета, директор Института специальной металлургии и технологии, главный библиотекарь Северовосточного университета. Специалист в области металлургических процессов и технологий, нетрадиционных способов производства оксида алюминия, самораспространяющегося высокотемпературного синтеза, обработки шлама методами кальцификации-карбонизации.*

Chen Yanbin *— Dr. Sci., professor. Vice-president of Beijing Easpring material technology Co., Ltd. Expert in the field of research, development and industrialization of the cathode materials for lithium ion batteries on the base of lithium cobalt oxide (LCO), lithium manganese oxide (LMO) and lithium nickel cobalt manganese oxide (NCM).*

Чэнь Яньбинь *— Доктор наук, профессор. Вице-президент Пекинской технологической компании Easpring по разработке и производству ключевых материалов для ионно-литиевых аккумуляторов. Специалист в области исследования, разработки и внедрения новых катодных материалов для ионно-литиевых аккумуляторов на основе оксида кобальта (LCO), оксидов лития-марганца (LMO) и оксидов лития, никеля, кобальта, марганца (NCM)*

Алымов Михаил Иванович — *член-корреспондент РАН, доктор технических наук, профессор. Директор Института структурной макрокинетики и проблем материаловедения им. А.Г. Мержанова Российской академии наук (ИСМАН РАН). Лауреат премии Правительства Российской Федерации в области науки и техники (2017 г.). Специалист в области порошковой металлургии и наноматериалов, синтеза и модификации материалов в условиях высоких динамических давлений.*

Alymov Mikhail Ivanovich — *Corresponding member of the Russian Academy of Sciences, Dr. Sci. (Eng.), professor. Director of the Merzhanov Institute of structural macrokinetics and problems of materials science of the Russian Academy of Sciences (ISMAN RAS). Winner of the Prize of the Government of the Russian Federation (2017). Expert in the field of powder metallurgy, nanomaterials, synthesis and modification of materials under high dynamic pressures.*

Гильмутдинов Альберт Харисович *— действительный член Академии наук Республики Татарстан (отделение физики, энергетики и наук о Земле), доктор физико-математических наук, профессор. Заслуженный деятель науки Республики Татарстан. Лауреат государственной премии Республики Татарстан в области науки и техники (2010 г.). Специалист в области применения методов атомной спектроскопии для исследования материалов.*

Gilmutdinov Albert Kharisovich — *Academician of the Academy of Sciences of the Republic of Tatarstan, Dr. Sci. (Phys. & Math.), professor. Honored scientist of the Republic of Tatarstan. Winner of the State Prize of the Republic of Tatarstan (2010). Expert in the field of atomic spectroscopy of materials.*

Zhu Minggang — *Dr. Sci., professor. China Iron & Steel research institute group. Director Zhongguancun open laboratory – Advanced permanent magnetic materials analysis and testing Lab. Secretary general and deputy director of the Chinese society of rare earths technical committee on permanent magnets. Review expert of National standardization technical committee on rare earth, member of permanent magnet motors professional committee of China electrotechnical society. Winner of the State science and technology prize, Beijing science and technology award, China metallurgical science and technology award, and Zhejiang provincial science and technology progress award. Expert in the field of structure design, physical properties and manufacturing technology of advanced permanent magnetic materials.*

Чжу Минган — *Доктор наук, профессор. Китайский научно-исследовательский институт железа и стали. Директор Чжунгуаньцуньской открытой лаборатории анализа и испытаний перспективных материалов для постоянных магнитов. Генеральный секретарь и заместитель директора технического комитета по постоянным магнитам Китайского общества редкоземельных материалов. Эксперт по редким землям национального технического комитета по стандартизации, член профессионального комитета по электродвигателям с постоянными магнитами Китайского электротехнического общества. Лауреат государственных и провинциальных премий по науке и технике. Специалист в области структуры и физических свойств, а также разработки технологических процессов получения новых материалов для постоянных магнитов.*

Козюхин Сергей Александрович — *доктор химических наук, главный научный сотрудник Института общей и неорганической химии РАН. Специалист в области исследования и синтеза некристаллических полупроводников, разработки материалов для некремниевой солнечной энергетики.*

Kozyukhin Sergey Aleksandrovich — *Dr. Sci (Chem.), chief researcher at the Institute of general and inorganic chemistry of the Russian Academy of Sciences. Expert in the field of research and synthesis of non-crystalline semiconductors, development of materials for non-silicon solar energy.*

Кузнецов Сергей Александрович — *доктор химических наук. Директор Института химии и технологии редких элементов и минерального сырья (ИХТРЭМС) Кольского научного центра Российской Академии Наук. Специалист в области высокотемпературной химии и электрохимического синтеза новых соединений и создания композиционных материалов различного функционального назначения.*

Kuznetsov Sergey Alexandrovich — *Dr. Sci. (Chem.). Director of the Institute of chemistry and technology of rare elements and mineral raw materials (ICTREMR) of the Kola Science Center of the Russian Academy of Sciences. Expert in the field of high-temperature chemistry and electrochemical synthesis of new compounds and the creation of composite materials for various functional purposes.*

Овчаренко Владимир Ефимович — *доктор физико-математических наук, профессор. Заведующий лабораторией композиционных материалов Института физики прочности и материаловедения Сибирского отделения Российской Академии Наук. Специалист в области создания новых металлических и композиционных материалов конструкционного и инструментального назначений.*

Ovcharenko Vladimir Efimovich — *Dr. Sci. (Phys & Math), professor. Head of the Laboratory of Composite Materials of the Institute of strength physics and materials science of the Siberian Branch of the Russian Academy of Sciences. Expert in the field of creation of new metal and composite materials for structural and instrumental purposes.*

Liu Min — *Dr. Sci., professor. Vice-president of Guangdong Academy of Sciences, director of National engineering laboratory of modern material surface engineering technology, executive director of China material research society, vice-director of Surface engineering branch of China mechanical engineering society. Winner of many State, Provincial and Ministerial Awards of the scientific and technological progress. Expert in the field of thermal spraying and laser surface engineering.*

Лю Минь — Доктор наук, профессор. Вице-президент Гуандуньской Академии Наук, директор Национальной инженерной лаборатории современных технологий обработки поверхности материалов, исполнительный директор Китайского материаловедческого общества, вице-директор отделения инженерии поверхности Китайского общества машиностроения. Лауреат многих государственных, правительственных и местных премий по науке и технике. Специалист в области термического напыления и лазерной обработки поверхности.

15 октября, вторник
October 15, Tuesday

14:00 – 20:00	Регистрация в холле гостиницы «Жемчужина» Registration
19:00	Приветственный ужин Welcome dinner

16 октября, среда
October 16, Tuesday

9:00 – 10:00	**Открытие Симпозиума** **Opening of the Symposium**
Президиум Presidium	Jia Mingxing, Tu Hailing, Sun Chuanyao, Nie Zuoren, Huang Xiaowei, Zhao Xiaochen, Xia Xiaoou, Lu Zhifang, Zhang Pingxiang, Zhu Shaowu
	К.А. Солнцев, В.Я. Панченко, В.С. Комлев, А.Х. Гильмутдинов, С.А. Кузнецов, А.И. Лотков, К.В. Григорович, Б.А. Калин, А.К. Прыгаев, Симаков С.В.
	Вступительное слово от Российского и Китайского оргкомитетов Opening speech from Russian and Chinese committee
10:00 - 10:30	Фотографирование Photography
10:30 – 11:50	**Пленарное заседание** **Plenary session**
Председатели Chairmen	Академик К.А. Солнцев, академик Сунь Чуаньяо Academician K. Solntsev, academician Sun Chuanyao
10:30 – 11:10	**В.Я. Панченко,** д.ф.-м.н., академик РАН, профессор, *Российский фонд фундаментальных исследований*
	Антистоксовые наночастицы в медицинской диагностике
	V.Ya. Panchenko, Dr Sci, Academician of RAS, Prof. *Russian Foundation of Basic Research*
	Anti-Stokes nanoparticles in medical diagnostics (In Russian with translation into Chinese.)
11:10 – 11:50	**Tu Hailing,** Honorary President, Academician *General Research Institute For Nonferrous Metals Group Co., Ltd.*
	Micro- and Nanoelectronic materials for the New Generation of Information Technology (In English)
11:50 – 12:10	**Перерыв** **Break**
12:10 – 13:30	**Пленарное заседание** **Plenary session**
Председатели Chairmen	Академик Ту Хейлинг, чл.-корр. РАН К.В. Григорович Academician Tu Hailing, Corr. member of RAS K.V. Grigorovich

12:10 – 12:50	**Nie Zuoren**, Vice President, Academician *Beijing University of Technology* Er-containing Micro-alloyed Aluminum Alloys (In English)
12:50 – 13:30	**V.S. Komlev,** Dr.Sci., Corr. member of RAS, Professor of RAS, Director IMET RAS Additive manufacturing in tissue engineering (In English)
13:30 – 15:00	**Обеденный перерыв** **Lunch**
15:00 – 16:20	**Пленарное заседание** **Plenary session**
Председатели	Проф. С.А. Козюхин, проф. Чжао Сяочен Prof. S.A. Kozyukhin, Prof. Zhao Xiaochen
15:00 – 15:40	**Huang Xiaowei,** Chief Expert, Academician *General Research Institute For Nonferrous Metals Group Co., Ltd.* Green and efficient development and application of rare earth resources (In Chinese with translation into Russian)
15:40 – 16:20	**Б.А.Калин,** д.ф.-м.н., профессор, заслуженный деятель науки и техники РФ, лауреат премии Правительства РФ, заведующий кафедрой *Национальный исследовательский ядерный университет МИФИ* Разработка и применение наноструктурных сплавов для создания неразъемных соединений в энергонапряженной технике **B.A. Kalin**, Dr. Sci., prof., *National Research Nuclear University MEPhI* Development and application of nanostructured alloys to create permanent joints in energy-intensive technology (In Russian with translation into Chinese)
16:20 – 16:40	**Перерыв** **Break**
16:40 – 18:00	**Пленарное заседание** **Plenary session**
Председатели:	Проф. А.И. Лотков, проф. Ся Сяоу Prof. A.I. Lotkov, prof. Xia Xiaoou
16:40 – 17:20	**Zhang Pingxian,** President, Professor *Northwest Institute for Nonferrous Metal Research* Progress on R&D of superconducting materials for high magnetic field applications (In English)
17:20 – 18:00	**V.A. Gribkov**, Dr. Sci., prof., *Baikov Institute of Metallurgy and Materials Science* Testing of materials perspective for nuclear fusion reactors with inertial plasma confinement by Plasma Focus devices (In English)

17 октября, четверг
October 17, Tuesday

9:00 – 10:20	**Пленарное заседание** **Plenary session**
Председатели	Проф. Б.А. Калин, проф. Хуан Сяовей Prof. B.A. Kalin, prof. Huang Xiaowei
9:00 – 9:40	**E.A. Gudilin**, Corr. member of RAS *M.V.Lomonosov Moscow State University*
	Mendeleev's Periodic Table in "nano" dimensions (In English)
9:40 – 10:20	**Zhang Tingan,** Dean, Professor *Northeastern University*
	A novel method of preparation of Ti and its alloys by multistage thermal reduction (In Chinese with translation into Russian)
10:20 – 10:40	**Перерыв** **Break**
10:40 – 12:00	**Пленарное заседание** **Plenary session**
Председатели	Проф. В.А. Грибков, проф. Лу Чжифан Prof. V.A. Gribkov, prof. Lu Zhifang
10:40 – 11:20	**Chen Yanbin,** Vice President, Professor, *Beijing Easpring Material Technology Co., Ltd.*
	The challenges, solutions and development of high energy Ni-rich NCM/NCA LiB cathode materials (In English)
11:20 – 12:00	**M.I. Alymov**, Corr. member of RAS *Merzhanov Institute of Structural Macrokinetics and Materials Science Russian Academy of Sciences*
	Innovative activity in advanced powder materials (In English)
12:00 – 14:00	**Обеденный перерыв** **Lunch**
14:00 – 15:20	**Пленарное заседание** **Plenary session**
Председатели	Проф. В.Е. Овчаренко, проф. Жу Шаову Prof. V.E. Ovcharenko, prof. Zhu Shaowu
14:00 – 14:40	**A.Kh. Gilmutdinov**, Dr. Sci, Prof., Rector *Kazan National Research Technical University named after A.N.Tupolev-KAI*
	Plasma treatment and synthesis of powders for additive manufacturing (In English)

14:40 – 15:20	**Zhu Minggan,** Professor *China Iron & Steel Research Institute Group* The development of science and industrial technology of rare earth permanent magnetic materials (In Chinese with translation into Russian)
15:20 – 15:40	**Перерыв** **Break**
15:40 – 17:00	**Пленарное заседание** **Plenary session**
Председатели	Проф. А.Б. Цепелев, проф. Чен Вей Prof. A.B. Tsepelev, prof. Chen Wei
15:40 – 16:20	**S.A. Kozyukhin,** Dr. Sci., Prof. *Институт общей и неорганической химии им. Н.С. Курнакова РАН* Phase Change Memory Materials and Laser Induced Modification Effects (In English)
16:20 – 17:00	**Huang Haiguang**, Vice President, Vice Professor *Yunnan Chufeng New Material Group Co., Ltd.* Research Progress of Biomedical Titanium Material (In Chinese with translation into Russian)

18 октября, пятница
October 18, Friday

9:00 – 10:20	**Пленарное заседание** **Plenary session**
Председатели:	Проф. А.К. Прыгаев, Проф. Сюн Тяньин Prof. A.K. Prygaev, Prof. Xiong Tianying
9:00 – 9:40	**S.A. Kuznetsov**, Dr. Sci., prof., Director *Tananaev Institute of Chemistry – Subdivision of the Federal Research Centre "Kola Science Centre of the Russian Academy of Sciences"; Science Centre of Russian Academy of Sciences* Surface modification for creation of functional materials in molten salts and their application from cryogenic to ultrahigh temperatures (In English)
9:40 – 10:20	**Xia Dingguo,** Professor, Director of Lab *Peking University* Development of positive electrode materials for power batteries: from theory to practice (In English)
10:20 – 10:40	**Перерыв** **Break**
10:40 – 12:00	**Пленарное заседание** **Plenary session**
Председатели:	Чл.-корр. К.В. Григорович, Проф. Ванг Чжаовей Corr. member K.V. Grigorovich, Prof. Wang Zhaowen

10:40 – 11:20 **Liu Min,** Professor, Vice President
Guangdong Academy of Sciences

The development and applications of cold spray technology
(In Chinese with translation into Russian)

11:20 – 12:00 **В.Е. Овчаренко,** д.ф.-м.н., профессор, Заведующий лабораторией
Институт физики прочности и материаловедения СО РАН

Импульсное электронно-ионно-плазменное облучение как инструмент снижения дефектности инструментальной металлокерамики.

V.E. Ovcharenko, Dr.Sci., Prof. Head of Laboratory
Institute of Strength Physics and Materials Science of Siberian Branch of Russian Academy of Sciences

Pulsed electron-ion-plasma irradiation as a tool to reduce the defectiveness of instrumental metal ceramics.
(in Russian with translation into Chinese)

Стендовые доклады
Poster sessions

16-19 октября

СЕКЦИЯ 1. Функциональные материалы

Исследования и разработка перспективных материалов с особыми физико-химическими и теплофизическими свойствами: электрическими, магнитными, оптическими, каталитическими. Редкие и драгоценные металлы, высокочистые вещества. Материалы с особыми поверхностными свойствами. Тугоплавкие и особотвердые материалы

SECTION 1. Functional Materials

Research and development of advanced materials with special physico-chemical and thermos-physical properties: electrical, magnetic, optical, catalytic. Rare and precious metals, highly pure substances. Materials with special surface properties. Refractory and super-hard materials.

1-1 **I.M. Minaev[1], A.V. Troitskii[1], A.V. Ponomarev[1], I.V. Anischenko[2], S.V. Pokrovskii [2], I.A. Rudnev[2], G.N. Mikhailova[1]**
[1]Prokhorov General Physics Institute of the Russian Academy of Sciences
[2]National Research Nuclear University MEPhI (Moscow Engineering Physics Institute), Moscow, Russia
GdBCO (123) HTS 2G tapes superconducting characteristics investigation under the pulsed electron beam exposure impact

1-2 **N.V. Volkov[1], I.A. Bondarev[1,2], A.S. Tarasov[1], M.V. Rautskii[1], A.V. Lukyanenko[1,2], D.A. Smolyakov[1], S N. Varnakov[1], S.G. Ovchinnikov[1]**
[1]Kirensky Institute of Physics, Federal Research Center KSC SB RAS, Krasnoyarsk, Russia
[2]Institute of Engineering Physics and Radio Electronics, Siberian Federal University, Krasnoyarsk, Russia
Magnetotransport phenomena and spin accumulation in MIS structures

1-3 **V.V. Vorobev[1,2], A.M. Rogov[1,2], V.I. Nuzhdin[1], V.F. Valeev[1], A.L. Stepanov[1]**
[1] Nanooptics and Nanoplasmonics Dept., Kazan Physical-Technical Institute, Russian Academy of Sciences, Kazan, Russia
[2] Kazan Federal University, Kazan, Russia
30 keV Ag^+-ion sputtering of silicon surface

1-4 **V.N. Gulbin[1], N.N. Fadeev[2]**
[1] Radioprotective Materials Center, JSC Engineering and Marketing Center of Corporation Vega, Moscow, Russia
[2] LLC Greenhouse, Astrakhan, Russia
Polymeric foamcomposite materials

1-5 **A. Gurylev[1], P. Kharitonskii[1,2], A. Kosterov[2], I. Berestnev[2], E. Sergienko[2]**
[1] Saint Petersburg Electrotechnical University ‘‘LETI”, Saint Petersburg, Russia
[2] Saint Petersburg State University, Russia
Magnetic properties of fired clay (bricks) possibly containing epsilon iron (III) oxide

1-6 **S.I. Dorovskikh, E.S. Vikulova, D.B. Kal'nui, N.B. Morozova**
Nikolaev Institute of Inorganic Chemistry SB RAS
MOCVD of Pt-cotaining coatings on the contacts of electrophysiological diagnostic electrodes

1-7 **O.Yu. Elagina, G.I. Vyshegorodtseva, Yu.S. Dubinov, O.B. Dubinova**
National University of Oil and Gas “Gubkin University”, Moscow, Russia
The current state of the use materials with shape memory effect in the oil and gas and related industries

1-8 **N.V. Zhirenkina, M.A. Mashkovtsev, N.V. Obabkov, S.V. Buynachev, A.S. Kosykh, D.K. Aleshin, A.O. Vereshchagin, A.S. Kononenko**
Department of Rare Metals and Nanomaterials, Ural Federal University, Ekaterinburg, Russia
Investigation of the effect of preliminary modification of solutions on the properties of precipitated hydrated zirconium oxides

1-9 **G.A. Melnikov, N.M. Ignatenko, A.S. Gromkov**
Southwest State University, Kursk, Russia
Quantum dots in the structure of quasicrystalline systems

1-10 **E.A. Il’ina[1], E.D. Lyalin[1,2], B.D. Antonov[1], A.A. Pankratov[1]**
[1]Institute of High-Temperature Electrochemistry of Ural Branch of RAS, Ekaterinburg, Russia
[2]Ural Federal University named after the first President of Russia B.N. Yeltsin, Ekaterinburg, Russia
Sol-gel synthesis and determination of optimal sintering conditions of the $Li_{6.75}La_3Zr_{1.75}Nb_{0.25}O_{12}$ solid electrolyte

1-11 **O.A. Kashin, K.V. Krukovskii, T.M. Poletika**
Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia
Effect of heat treatments on the structure and properties of a small-diameter thin-walled tube of a medical nickel titanium alloy

1-12 **V.N. Kolosov, M.N. Miroshnichenko, T.Yu. Prokhorova**
Tananaev Institute of Chemistry — Subdivision of the Federal Research Centre Kola Science Centre of the Russian Academy of Sciences, Apatity, Murmansk region, Russia
Magnesium vapor reduction of complex double compounds of molybdenum with tungsten

1-13 **V.N. Kolosov, V.M. Orlov, M.N. Miroshnichenko**
Tananaev Institute of Chemistry — Subdivision of the Federal Research Centre Kola Science Centre of the Russian Academy of Sciences, Apatity, Murmansk region, Russia
Influence of the impurity of phosphorus in the precursor on characteristics of magnesiothermic tungsten powders

1-14 **P.A. Korneev, I.L. Strulya**
JSC "Kompozit"
Beryllium. Development and production of components for aerospace engineering, power and scientific installations.

1-15 **A.V. Kulebyakin[1], D.A. Agarkov[1,2], M.A. Borik[1], G.M. Eliseeva[2], V.A. Kolotygin[2], I.E. Kuritsyna[1,2], E.E. Lomonova[1], F.O. Milovich[3], V.A. Myzina[1], V.V. Osiko[1], A.S. Chislov[1,3], N.Yu. Tabachkova[1,3]**
[1]Prokhorov General Physics Institute RAS, Moscow, Russia
[2]Institute of Solid State Physics RAS, Chernogolovka, Moscow region, Russia
[3]National University of Science and Technology (MISIS), Moscow, Russia
Effect of Yb_2O_3 stabilizing impurity on the structure and properties of $(ZrO_2)_{0.9-x}(Sc_2O_3)_{0.1}(Yb_2O_3)_x$ crystals

1-16 **A.R. Latypova**
Ivanovo State University of Chemistry and Technology
Synthesis of functional materials — supports of catalytic phases for supported catalysts for the hydrogenation

1-17 **A.S. Lozhkomoev, S.O. Kazantsev**
Institute of Strength Physics and Materials Science of Siberian Branch of RAS
Production of hemostatic materials based on porous nanostructured aluminum and iron oxides

1-18 **A.S. Lozhkomoev, A.V. Pervikov, O.V. Bakina, A.N. Fomenko, A.M. Kondranova**
Institute of Strength Physics and Materials Science of Siberian Branch of RAS
Production of antimicrobial nanocomposite particles during electrical explosion of two wires in an oxygen-containing atmosphere

1-19 **V.K. Karpasyuk[1], A.G. Badelin[1], D.I. Merkulov[1], I. M. Derzhavin[1] and S Kh Estemirova[2,1,3]**
[1] Research and Educational Center for Functional Magnetic Materials, Astrakhan State University, Astrakhan, Russia
[2] Laboratory of Statics and Kinetics of Processes, Institute for Metallurgy, Ural Division of RAS, Yekaterinburg, Russia
[3] Institute of New Technologies and Materials, Ural Federal University, Yekaterinburg, Russia
Unusual properties and features of oxygen nonstoichiometry of La-Sr

manganites with manganese replacement by a combination of nickel and germanium

1-20 **B.P. Mikhailov[1], A.B. Mikhailova[1], V.Ya. Nikulin[2], I.V. Borovitskaya[1] and P.V. Silin[2]**

[1]Baikov Institute of Metallurgy and Materials Science of RAS, Moscow, Russia
[2]Lebedev Physical Institute, Russian Academy of Sciences, Moscow, Russia

The critical currents of MgB_2 tapes after the shock-wave plasma influence through the protective screens with different thermal characteristics

1-21 **P.V. Mikheeva, A.Yu. Teterina, I.V. Smirnov, A.Yu. Fedotov, V.S. Komlev**

Baikov Institute of Metallurgy and Material Science of RAS, Moscow, Russia

The influence of immersion in buffer systems simulating body fluids on properties and morphology of octacalcium phosphate granules

1-22 **V.P. Molchanov[1], M.A. Medkov[2], Sun Fengyue[3]**

[1] Far East Geological Institute FEB RAS, Vladivostok, Russia
[2] Institute of Chemistry, Far Eastern Branch of the RAS, Vladivostok, Russia
[3] Jilin University, Changchun, China

Studies on the opportunities of producing superpure graphite from the high-carbone rocks of the Jiamusi-Hankaiskaya province

1-23 **N.I. Mukhurov[1], I.V. Gasenkova[1], H. Zhang[2], G. Yu[3]**

[1] State Scientific and Production Association «Optics, Optoelectronics and Laser Technology», Minsk, Belarus
[2]Harbin Engineering University, Nangang District, Harbin, China,
[3]Harbin University of Science and Technology, Nangang District, Harbin, China

A universal basic for creating microsensory devices those are sensitive to changing environmental conditions

1-24 **T.O. Obolkina, M.A. Goldberg, V.V. Smirnov, S.V. Smirnov, O.S. Antonova, D.D. Titov, S.M. Barinov**

Baikov Institute of Metallurgy and Materials Science of RAS, Moscow, Russia

The effect of transition metal oxides on the sintering and properties of ceramics in the ZrO_2-Al_2O_3 system

1-25 **V.M. Orlov[1], M.V. Kryzhanov[1], R.N. Osaulenko[2], D.V. Lobov[2]**

[1] Tananaev Institute of Chemistry - Subdivision of the Federal Research Centre "Kola Science Centre of the Russian Academy of Sciences"
[2] Petrozavodsk State University

Nitriding in the reduction of tantalum and niobium oxide compounds with magnesium vapor

1-26 **S.V. Pershina[1], M.Y. Dzuba[1,2], S.G. Vlasova[2], Y.V. Baklanova[3]**

[1]Institute of High-Temperature Electrochemistry, Ural Branch of Russian Academy of Sciences, Yekaterinburg, Russian Federation
[2]Ural Federal University named after the first President of Russia B.N. Yeltsin, Yekaterinburg, Russian Federation
[3] Institute of Solid State Chemistry, Ural Branch of the Russian Academy of Sciences, Yekaterinburg, Russian Federation

Structural Investigations of $Li_{1.5}Al_{0.5}Ge_{1.5}(PO_4)_3$ glass-ceramics by Solid State NMR

1-27 **O.Y. Elaguina, V.M. Gusev, A.K. Prygaev, N.S. Nesterenko**
National University of Oil and Gas "Gubkin University"
Some specific aspects of the process of production of pseudo-alloyed coatings by thermal spraying

1-28 **E.A. Radkova, A.Yu. Teterina, O.V. Baranov, P.V. Mikheeva, I.V. Smirnov, A.Yu. Fedotov, V.S. Komlev**
Baikov Institute of Metallurgy and Material Science of RAS, Moscow, Russia
The effect of buffer sedimentation on the process of biometric deposition of calcium phosphates

1-29 **N.A. Paliy, V.A. Ermishkin, O.K. Belousov, M.A. Sevostianov, V.V. Roshchupkin, N.A. Minina**
Baikov Institute of Metallurgy and Materials Science of RAS, Moscow, Russia
Investigation of the thermal stability of titanium nickelide tantalum coating using photometric analysis of structural images

1-30 **M.A. Osipov, A.S. Starikovskii, D.A. Abin, S.V. Pokrovskii, I.V. Anischenko, I.A. Rudnev**
National Research Nuclear University MEPhI
The role of the temperature at formation of the magneto-force characteristics of high-temperature superconducting composites

1-31 **M.F. Churbanov, I.V. Skripachev, G.E. Snopatin, L.A. Ketkova, V.G. Plotnichenko**
G.G. Devyatykh Institute of Chemistry of High Purity Substances of RAS, Nizhny Novgorod
The problems of optical loss reduction in arsenic sulfide glass IR fibers.

1-32 **I.A. Sologubova, M.K. Kotvanova, S.S. Pavlova**
Yugra State University, Federal State Budgetary Educational Institution of Higher Education
Self-propagating high-temperature synthesis of oxide bronzes with regulated composition and properties

1-33 **A.Yu. Teterina, E.V.Solovieva , O.V. Baranov, Yu.V. Zobkov, V.S. Komlev**
[1] Baikov Institute of Metallurgy and Material Science of RAS, Moscow, Russia
[2] National Research Centre Kurchatov Institute, Moscow, Russia
Functionalization of tissue equivalents based on sodium alginate by human blood plasma

1-34 **L.A. Kalinina, J.N. Ushakova [1,3], M.A. Pentin [1], E.V. Kosheleva [1], I.V. Murin [2]**
[1]Vyatka State University, Institute of Chemistry and Ecology, Kirov, Russia
[2]St. Petersburg State University, 199034, St.Petersburg, Russia
Optimization of the functional properties in solid-state sulfide materials with the sulfur ion conductivity

1-35 **Yu.L. Shanenkova, A.I. Tsimmerman, L.V. Osokina**
Tomsk Polytechnic University, Tomsk, Russia
Creating a composite material ZnO-Bi_2O_3 with a core-shell structure for varistor ceramics

1-36 **M.A. Goldberg, V.V. Smirnov, D.R. Khairytdinova, P.A. Krochicheva, A.A. Ashmarin, V.P. Sirotinkin, A.S. Baikin, O.S. Antonova, S.M. Barinov, V.S. Komlev**
Baikov Institute of Metallurgy and Materials Science of RAS, Moscow, Russia
Bone cements of calcium-magnesium phosphate and magnesium oxide

1-37 **P.A. Chicheva[1,2], K.A. Chudov[1], K.S. Levchenko[1], N.O. Poroshin[1], P.S. Shmelin[1], E.P. Grebennikov[1]**
[1]JSC "Technomash", Moscow, Russian Federation
[2]RTU MIREA – Russian Technological University, Moscow, Russia
The study of the electrochemical properties of new electrochromic compounds based on 3-aryl-4, 5-bis
(pyridin-4-yl) isoxazoles derivatives

1-38 **V.M. Shkinev**
Vernadsky Institute of Geochemistry and Analytical Chemistry of RAS
The liquid-liquid interfacial synthesis of the Fe_3O_4 nanocomposite and application as a new magnetic sorbent

1-39 **I.G. Bratchikova, S.O. Kovtun, E.B. Markova, N.Yu. Isaeva, A.G. Cherednichenko**
Peoples' Friendship University of Russia (RUDN University), Moscow, Russia
Features of the separation of difficultly separable organic compounds by liquid-phase adsorption on HKUST-1-type framework structures

1-40 **A.I. Buglakov, D.E. Larin, V.V. Vasilevskaya**
A.N. Nesmeyanov Institute of Organoelement Compounds
Computer simulation of amphiphilic macromolecules in a binary mixture of solvents via dissipative particle dynamics approach

1-41 **R.Kh. Dzhenloda, V.M. Shkinev, V.V. Maksimova, B.Ya. Spivakov**
Vernadsky Institute of Geochemistry and Analytical Chemistry of Russian Academy of Sciences
The liquid-liquid interfacial synthesis of the Fe_3O_4 nanocomposite and application as a new magnetic sorbent

1-42 **V.N. Chuvil'deev[1], A.V. Nokhrin[1], V.I. Kopylov[1,2], N.V. Melekhin[1], I.S. Shadrina[1], A.V. Piskunov[1], E.S. Smirnova[1], Y.G. Lopatin[1] and M.M. Vostokov[1]**
[1] Lobachevsky State University of Nizhni Novgorod, Nizhny Novgorod, Russian Federation
[2] Physics and Technology Institute, National Academy of Sciences of Belarus, Minsk, Belarus
Investigation of thermal stability of the structure and properties of ultra-fine-grained copper alloys obtained by ECAP

1-43 **V.N. Chuvil'deev[1], M.Yu. Gryaznov[1], S.V. Shotin[1], A.V. Nokhrin[1], V.I. Kopylov[1,2], M.K. Chegurov[1], A.A. Bobrov[1], I.S. Shadrina[1] and M.M. Vostokov[1]**

[1] Lobachevsky State University of Nizhni Novgorod, Nizhny Novgorod, Russian Federation

[2] Physics and Technology Institute, National Academy of Sciences of Belarus, Minsk, Belarus

Investigation of superplasticity of ultrafine-grained copper alloys obtained using the ECAP

1-44 **R.I. Kuz'mina, E.I. Kovalenko**

Saratov National Research State University named after N.G. Chernyshevsky

High-efficient solid-fuel combustion catalysts

1-45 **K.S. Levchenko, E.G. Adamov, P.S. Shmelin, K.A. Chudov, K.A. Lyssenko, A.Yu. Kalashnikov, D.U. Demin, N.O. Poroshin, E.P. Grebennikov**

CNITI Technomash

Synthesis and characterization of a crosslinking monomer based on 1,3-diallyl-1,3-di[bicyclo[4.2.0]octa-1,3,5-trien-3-yl]-1,3-dimethyl-siloxane

1-46 **A.V. Nokhrin[1], I.S. Shadrina[1], V.N. Chuvil'deev[1], V.I. Kopylov[1,2], A.A. Bobrov[1], M.Yu. Gryaznov[1], A.N. Sysoev[1], N.A. Kozlova[1], M.K. Chegurov[1], N.N. Berendeev[1], A.E. Zheleznov[1], A.V. Piskunov[1], D.A. Pushkova[1], A.A. Murashov[1], D.A. Revva[1]**

[1] Lobachevsky State University of Nizhni Novgorod, 23 Gagarina ave., Nizhny Novgorod, Russian Federation

[2] Physics and Technology Institute, National Academy of Sciences of Belarus, 10 Kuprevich st., Minsk, Belarus

Study of the thermal stability of structure and mechanical properties of submicrocrystalline aluminum alloys Al-2.5Mg-Sc-Zr

1-47 **Qingmeng Zhang, Jian Yang, Junyou Chen, Zhimin Yang, Changhui Mao**

Advanced Electronic Materials Institute, GRIMAT Engineering Institute Co., Ltd., Beijing, China

Charge-discharge properties of (Pb, Ba)Nb_2O_6-$NaNbO_3$-SiO_2 glass-ceramics under high electric fields

1-48 **Tao Yang [1], Dazhou Yan [1,2]**

[1] China ENFI Engineering Corporation, Beijing, PR China

[2] National Engineering Laboratory of Polysilicon Manufacturing Technology, Luoyang, PR China

Construction of the renewable energy eco-system: strategic distributions along the chain of "photovoltaics-energy storage-electric vehicles"

1-49 **Ye Wan[1,2,3,a], Dazhou Yan[1,3,b*], Jin Xiao[2], Dongxu Chu[1], Yuanyuan Zhang[1]**

[1] National Engineering Laboratory of Polysilicon Manufacturing Technology, Luoyang, China;

[2] Central South University, School of Metallurgy and Environment, Changsha, China;

[3] China Enfi Engineering Corporation, Beijing, China.

Discussion on Hydrogen Quality Detection Methods for Polysilicon Production

1-50 **Kang Yuan, Weiao Hou, Haoran Peng**
[1]BGRIMM Technology Group, Beijing, China
[2]BGRIMM Advanced Materials Science & Technology Co., Ltd, Beijing
[3]Beijing Engineering Technology Research Center of Surface Strengthening and Repairing of Industry Parts, Beijing, China
Measurement on the thermal barrier ability of ceramic coatings in a flame thermal shock tester

1-51 **Fei Ma[1], Jingguo Zhang[1,2]**
[1]General Research Institute for Nonferrous Metals, Beijing, China
[2]GRIPM Advanced Materials Co., Ltd., Beijing, China
Recent Progress in Syntheses and Applications of Cu@Ag Core-shell Nanoparticles

1-52 **SHEN Chen, WANG Huaiguo**
China Nonferrous Metals Industry Technology Development and Exchange Center, Beijing, China
Research on the Technological Development of Lithium Ion Battery Industry in China

1-53 **Yanbin Chen[1,2], Shunlin Song[1], Xuequan Zhang[1], Yafei Liu[1,2]**
[1] Beijing Easpring Material Technology Co., Ltd., Beijing, China
[2] BGRIMM Technology Group, Beijing, China
The challenges, solutions and development of high energy Ni-rich NCM/NCA LiB cathode materials

1-54 **Junmin Zhang, Ming Wen, Jialin Chen, Junmei Guo, Weiming Gua**n
State Key Laboratory of Advanced Technologies for Comprehensive Utilization of Platinum Metals, Kunming Institute of Precious Metals, Kunming, Yunnan, China
The failure mechanism of NiPtSi multilayer films

1-55 **Huiqun Niu [1, 2], Hongying Yang [1, 2], Linlin Tong [1, 2], Shuiping Zhong [3], Yuanyuan Liu[4]**
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Spectral study of humic substance extract from pressurized oxidizing slag of Carlin-typed gold deposit

1-56 **Fengguo Liu[1,2], Xiongwei Zhong[3], Junli Xu[4], Zhaowen Wang[1,2] and Zhongning Shi[1,2]**
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1-57 **Z. T. Wang[1], H. J. Luo[1], Q. L. He[1], H. Jiang[2]**
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1-58 **XIE Gang[1,2,3], YANG Yagang[1], YU Xiaohua[1], ZHANG Lei[1], SHI Chunyang[1], QU Yasong[1], LI Rongxing**
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[3] *State key laboratory of Common associated non-ferrous metal resources pressure hydrometallurgy technology, Kunming, Yunnan, China*
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1-59 **Niu Huiqun, Yang Hongying, Tong Linlin**
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1-60 **Yang Hongying[1], Niu Huiqun[1], Tong Linlin[1], Zhong Shuiping[2]**
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School of Metallurgy, Northeastern University, Shenyang, China
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1-66 **Fengguo Liu[1,2], Linlin Feng[1], Zhongning Shi[1,2], Zhaowen Wang[1,2]**
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1-67 **Xie Gang [1,2], Yang Yagang [1] Yu Xiaohua [1]**
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1-68 **Tu Hailing[1,2,3], Ma Fei[3], Zhang Qingzhu[2], Zhao Hongbin[2,3], Fan Yanyan[2], Li Tengfei[3] and Zhang Guohu[1]**
[1]National Engineering Research Center for Semiconductor Materials,
[2]State Key Laboratory of Advanced Materials for Smart Sensing,
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State Key Laboratory of Advanced Technologies for Comprehensive Utilization of Platinum Metals, Kunming Institute of Precious Metals, Kunming, People's Republic of China
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1-70 **Yongbo Yao, Haidong Li**
College of Material and Textile Engineering, Jiaxing University, Zhejiang Jiaxing, China
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1-71 **Ye Wan[1,2,3], Dazhou Yan[1,3], Jin Xiao[2], Dongxu Chu[1], Yuanyuan Zhang[1]**
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[2] Central South University, School of Metallurgy and Environment, Changsha, China;
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1-72 **Tao Yang [1], Dazhou Yan [1,2]**
[1] China ENFI Engineering Corporation, Beijing, PR China
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1-73 **Kang Yuan, Weiao Hou, Haoran Peng**
[1]BGRIMM Technology Group, Beijing 100160, China
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Measurement on the thermal barrier ability of ceramic coatings in a flame thermal shock tester

1-74 **Yanbin Chen[1,2*], Shunlin Song[1], Xuequan Zhang[1], Yafei Liu[1,2]**
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1-75 **Qingmeng Zhang, Jian Yang, Junyou Chen, Zhimin Yang, Changhui Mao**
Advanced Electronic Materials Institute, GRIMAT Engineering Institute Co., Ltd., Beijing, China
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1-76 **Chen Guobao, Gao Shixiong, Yang Hongying**
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1-77 **A.I. Ogarkov[1], I.A. Kovalev[1], A.V. Shokodko[1], S.V. Shevtsov[1], A.A. Ashmarin[1], E.A. Shokodko[1], A.A. Chesnokov[2], D.P. Shornikov[1], G.P. Kochanov[1], A.S. Chernyavskii[1], V.M. Ievlev[1,3], K.A. Solntsev[1,3]**
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Development of a fuel element on the basis of the composition (Zr,U)N for a high-temperature reactor using the oxidative constructing approach

1-78 **A.V. Shokodko[1], A.I. Ogarkov[1], A.A. Ashmarin[1], I.A. Kovalev[1], G.P. Kochanov[1], T.N. Penkina[1], A.A. Fomina[1], E.A. Shokodko[1], A.A. Chesnokov[2], A.S. Chernyavskii[1], V.M. Ievlev[1, 3], K.A. Solntsev[1, 3]**

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Regularities of formation of ceramics based on niobium nitride with cavity using oxidative constructing approach

1-79 A**.I. Ogarkov[1], V.Yu. Zufman[1], A.V. Shokodko[1], I.A. Kovalev[1], A.A. Ashmarin[1], A.A. Klimov**[1]**, G.P. Kochanov**[1]**, E.A. Shokodko**[1]**, A.A. Chesnokov**[2]**, S.S. Strelnikova**[1]**, A.S. Chernyavskii**[1]**, V.M. Ievlev[1,3], K.A. Solntsev[1,3]**

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Structure of ceramics obtained in the process of high-temperature oxidation of titanium foil within the framework of oxidative constructing approach

СЕКЦИЯ 2. Конструкционные материалы

Фундаментальные исследования в области физики прочности и пластичности металлических, керамических и композиционных материалов. Изучение механизмов пластической деформации, упрочнения, разрушения материалов для энергетики, в том числе ядерной, авиационной и космической техники.

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2-1 **A.V. Nokhrin[1], I.S. Shadrina[1], V.N. Chuvil'deev[1], V.I. Kopylov[1,2], A.A. Bobrov[1], M.Yu. Gryaznov[1], A.N. Sysoev[1], N.A. Kozlova[1], M.K. Chegurov[1], N.N. Berendeev[1], A.E. Zheleznov[1], A.V. Piskunov[1], D.A. Pushkova[1], A.A. Murashov[1], D.A. Revva[1]**

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Study of the thermal stability of structure and mechanical properties of submicrocrystalline aluminum alloys Al-2.5Mg-Sc-Zr

2-2 **G.S. Nagicheva, A.V. Nokhrin, A.V. Piskunov, N.V. Melekhin**
Lobachevsky State University of Nizhni Novgorod, Nizhny Novgorod, Russian Federation
Study of the influence of thermal treatment on the structure and mechanical properties of carbon rail steel

2-3 **I.S. Shadrina[1], A.V. Nokhrin[1], V.N. Chuvil'deev[1], V.I. Kopylov[1,2], A.A. Bobrov[1]**
[1] Lobachevsky State University of Nizhni Novgorod, 23 Gagarina ave., Nizhny Novgorod, Russian Federation
[2] Physics and Technology Institute, National Academy of Sciences of Belarus, Minsk, Belarus
An investigation of thermal stability of structure and mechanical properties of Al-0.5Mg-Sc submicrocrystalline aluminum alloys

2-4 **V.N. Chuvil'deev[1], V.I. Kopylov[1,2], A.V. Nokhrin[1], P.V. Andreev[1], A.A. Murashov[1], N.N. Berendeev[1], M.Yu. Gryaznov[1], I.S. Shadrina[1], N.Yu. Tabachkova[3,4], C.V. Likhnitskii[1], D.A. Gudz[1]**
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[3] National University of Science and Technology "MISIS"
[4] Prokhorov General Physics Institute, Russian Academy of Sciences
Structure and mechanical properties of ultrafine-grained near-α titanium alloy PT7M prepared by Rotary Swaging

2-5 **I.S. Shadrina[1], A.V. Nokhrin[1], V.N. Chuvil'deev[1], V.I. Kopylov[1,2], A.A. Bobrov[1], N.Yu.Tabachkova[3,4]**
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[4] Prokhorov General Physics Institute, Russian Academy of Sciences
Study of solid solution decomposition in cast and microcrystalline alloys Al-0.5 Mg-Sc with different scandium content

2-6 **M.V. Narykova, V.I. Betekhtin, A.G. Kadomtsev**
Ioffe Institute
Structural evolution of ultrafine-grained metals and alloys during creep tests

2-7 **K.E. Smetanina, P.V. Andreev, N.V. Malekhonova, E.A. Lantsev**
Lobachevsky State University of Nizhny Novgorod, Nizhny Novgorod, Russia
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2-8 **A.S. Chislov[1,2], M.A. Borik[1], A.V. Kulebyakin[1], E.E. Lomonova[1], F.O. Milovich[2], V.A. Myzina[1], Yu.N. Parkhomenko[4], P.A. Ryabochkina[3], N.V. Sidorova[3], N.Yu. Tabachkova[1,2]**
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Comparison of mechanical properties of zirconia crystals partially stabilized with yttria and gadolinia

2-9 **G.I. Shcherbakova[1], P.A. Storozhenko[1], T.L. Apukhtina[1], N.B. Kutinova[1], M.S. Varfolomeev[1,2], A.A. Zabelina[1], N.S. Krivtsova[1], D.V. Zhigalov[1], A.I. Drachev[1] and A.A. Ashmarin[3]**
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Organoelementoxanealumoxanes – precursors of ceramic fibers of oxide composition

2-10 **M.N. Krivosheina[1,2,6], E.V. Tuch[1], S.V. Kobenko[3]**
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[3] Federal state budgetary educational institution of higher education "Nizhnevartovsk State University", Nizhnevartovsk, Russia
Studies of the propagation of elastic and plastic waves in cubic single crystals

2-11 **A.N. Polilov[1], N.A. Tatus'[1], Xiaoyong Tian[2], Liu Hao[3]**
[1] Mechanical Engineering Research Institute named by A.A.Blagonravov, Russian Academy of Sciences
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2-12 **O.R. Kucharov**
Tashkent institute of irrigation and agricultural mechanization engineers
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2-13 **Liu Hao**
Bauman Moscow State Technical University
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2-14 **V.P. Korzhov**
Institute of Solid State Physics of the RAS
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2-15 **N.V. Korneeva[1], V.V. Kudinov[2], I.K. Krylov[2]**
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2-16 **G.I. Shcherbakova[1], P.A. Storozhenko[1], M.S. Varfolomeev[1,2], M.Kh. Blokhina[1], N.S. Krivtsova[1], D.V. Zhigalov[1], A.A. Ashmarin[3]**

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Al_2O_3−Y_2O_3−Cr_2O_3 ceramics based on organochromiumoxane yttriumoxane alumoxanes

2-17 **E.S. Gevorkyan[1], M. Rucki[2], K.S. Torosyan[3], M.V. Kislitsa[4] and Yu.G. Gutsalenko[5]**

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Composite materials based on fine-dispersed Al_2O_3 with enhanced physical and mechanical properties

2-18 **E.A. Gumennikova[1,2], D.D. Titov[1], A.S. Lysenkov[1], M.G. Frolova[1], Yu.F. Kargin[1], G.I. Shcherbakova[3], E.A. Novokovskaya[3]**

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Rheological properties of $MgAl_2O_4$ obtained from Preceramic Organomagnesiumoxanealumoxanes

2-19 **K.D. Danilin[1,2], D.D.Titov[1], A.S. Lysenkov[1], Yu.F. Kargin[1], S.V. Fedorov[1] and P.A. Miloserdov[3]**

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Physical and chemical properties of composite $(Mo_{1-x}Nb_x)Si_2$

2-20 **E.V. Demina[1], V.A. Gribkov[1], M.D. Prusakova[1], V.N. Pimenov[1], V.P. Sirotinkin[1], M. Paduch[2], S.V. Rogozhkin[3]**

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Behaviour of the 16%Cr ODS ferritic steel intended for nuclear fusion power

industry after tests in the conditions of irradiation in the Dense Plasma Focus facility PF-1000U

2-21 **Ye.Ye. Deryugin, M.O. Eremin, N.A. Narkevich**
Institut of Strength Physics and Materialsience SB RAS
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2-22 **A.S. Egorov[1], M.V. Bogdanovskaya[1], D.S. Gudeeva[1], N.M. Chalaya[2], D.V. Kramarev[2], V.S. Osipchik[3], V.N. Ivashkina[3], I.P. Storozhuk[4]**
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Investigation of the processes of modification of polyimide systems required to create reinforced composite materials by 3d printing

2-23 **A.S. Zhukov, B.K. Barakhtin, I.V. Shakirov, P.A. Kuznetsov**
NRC "Kurchatov Institute" — CRISM "Prometey", Saint-Petersburg, Russia
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2-24 **G.D. Kardashova, G.K. Safaraliev, Sh.Sh. Shabanov**
Dagestan state university
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2-25 **P. Krokhicheva, M. Goldberg, A. Konovalov, A. Ashmarin, A. Baikin, Yu. Kargin, S. Barinov, V. Komlev**
Baikov Institute of metallurgy and materials science RAS, Russia
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2-29 **T.Yu. Kiseleva[1], A.S. Ilyushin[1], E.V. Lazareva[1], I.P. Ivanenko[1], E.V. Yakuta[1], A.V. Khakhalin[1], S.I. Zholudev[2], S.A. Kovaleva[3], E.T. Devyatkina[4], T.F. Grigoryeva[4], K.V. Frolov[5], G.P. Markov[6], U. Enhnaran[7], D.Sangaa[7]**
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Structure and magnetic properties of mechanochemically synthesized UHMWPE/ferrite composites as precursors for electromagnetic shielding materials

2-30 **A.B. Tsepelev[1], T.Yu. Kiseleva[2], S.I. Zholudev[3], S.A. Kovaleva[4], T.F. Grigoryeva[5], I.P. Ivanenko[1], E.T. Devyatkina[5], A.S. Ilyushin[1], N.Z. Lyakhov[5]**

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Electron irradiation resistance of the composite material structure based on ultra-high molecular polyethylene and boron carbide

2-31 **A.S. Kopylov[1,4], V.T. Shashkova[1], I.A. Matveeva[1], V.S. Kaplin[1], N.N. Glagolev[1], N.V. Minaev[2], P.S. Timashev[2,3], A.B. Solovieva[1]**

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2-32 **V.A. Kuznetsov, V.A. Obodov, M.V. Gilev, D.V. Nesterov**

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2-33 **I.A. Nasyrov, G.V. Mavrin, I.G. Shaikhiev**

Kazan Federal University

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Guangdong Welding Institute

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2-35 **Xiangzhou Gao[1,2,3], Kaiping Du[1,2,3]**

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Effect of Carbon and Manganese Contents on Intra-granular Acicular Ferrite Nucleation in Steel Containing Nanoparticles

2-36 **Zeng Liying, Hong Quan, Mao Xiaonan, Qi Yunlian, Zhao Yongqing**
Northwest Institute for Nonferrous Metal Research, Xi´an, China
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2-37 **Zheng Lv, Qiushi Liang, Changhui Mao, Zhimin Yang, Jian Yang, He Dai**
Advanced Electronic Materials Institute, GRIMAT Engineering Institute Co., Ltd., Beijing, China
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2-38 **Defu LI, Song CHEN, Daquan LI**
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2-39 **Hongjie Luo**
School of Metallurgy, Northeastern University, Shenyang, China
Engineering Research Center of Ministry of Education for Advanced Materials Preparation Technology, Shenyang, China
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2-40 **Xin Shewei, Zhang Jingli, Mao Xiaonan, Zhao Yongqing, Hong Quan**
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2-41 **Z. L. Lyu[1,2], L. Jia[1] and L. Ma[1]**
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2-42 **Kezheng Sang, Linjie Liu, Xiaoheng Song, and Dejun Zeng**
School of Materials Science and Engineering, Chang'an University, Xi'an, P. R. China
Preparation of Silicon Carbide/Copper Composite by Pressureless Infiltration

2-43 **Haitang Yang[1], Shenwei Xu[1], Pingping Yang[2], Yang Chen[3, 5], Leiting Dong[3], Zaoyang Guo[4, 5] and Xiaozhong Huang[1]**
[1] School of Aeronautics and Astronautics, Central South University, Changsha, Hunan, China
[2] College of Aerospace Engineering, Chongqing University, Chongqing, China
[3] School of Aeronautic Science and Engineering, Beihang University, Beijing, China
[4] School of Science, Harbin Institute of Technology, Shenzhen, Guangdong, China
Mechanical Properties of SiCf/SiC Mini-Composites Reinforcements for SiCf/SiC Composites

2-44 **Zhang Desheng, Zhang Qin, Yang Hongying**
School of Metallurgy, Northeastern University, Shenyang, China
Effects of Rare Earth Element Ce on Microstructures and Properties of Ag-1.5Cu-0.5Zn Alloys Targets

2-45 **Xie Ming, Yang Youcai, Chen Yongtai, Wang Song, Li Aikun, Hu Jieqiong, Fang Jiheng, Zhang Jiming, Ma Hongwei, Duan Yunzhao, Liu Manmen, Zhao Shangqiang**
State Key Laboratory of Advanced Technologies for Comprehensive Utilization of Platinum Metals, Sino-Platinum Metals Co.,Ltd., Kunming
Development and application of silver-based brazing materials

2-46 **Xiaoyan Song, Xuemei Liu, Haibin Wang, Xingwei Liu, Zuoren Nie**
College of Materials Science and Engineering, Key Laboratory of Advanced Functional Materials, Education Ministry of China, Beijing University of Technology, Beijing, P. R. China
Enhancement of Strength and Toughness of Ultrafine and Nanocrystalline Cemented Carbides

2-47 **Jingmei Tao, Xiaofeng Chen, Yichun Liu, Rui Bao, Fengxian Li, Caiju Li, Jianhong Yi**
Faculty of Materials Science and Engineering, Kunming University of Science and Technology, Kunming, China
Interface interaction and synergistic strengthening behavior in pure copper matrix composites reinforced with functionalized carbon nanotube-graphene hybrids

2-48 **Xiangzhou Gao[1,2,3], Kaiping Du[1,2,3]**
[1] BGRIMM Technology Group, Beijing 100160, China
[2] BGRIMM Advanced Materials Science & Technology Co., Ltd, Beijing
[3] Beijing Engineering Technology Research Center of Surface Strengthening and Repairing of Industry Parts, Beijing, China
Effect of Carbon and Manganese Contents on Intra-granular Acicular Ferrite Nucleation in Steel Containing Nanoparticles

2-49 **Jigang Li [1, 2], Wei Yi[* 1, 2] , Jinhui Peng [1], Zena Xin [2], Panchao Zhao [2], Jialin Chen [2],Qing Liu [2]**
[1] School of Metallurgy and Energy Engineering, Kunming University of Science and Technology, Kunming,
[2] Kunming Institute of Precious Metals, Kunming, China
Synthesis, characterization and welding property of micro-spherical molybdenum-ruthenium particles

2-50 **Liu Yichun**
School of Materials Science and Engineering, Kunming University of Science and Technology, Kunming, China
Simultaneous achievement of high strength and high ductility in copper matrix composites with CNTs/Cu composite foams as reinforcing skeletons

2-51 **P. Guo, Y.Q Zhao, G.Y. Jia, Q. Hong, H.M Hou, H. Pan, Y.Q. Zhang, D.X Liu**
Northwest Institute for Nonferrous Metal Research, Xi'an, China
Study on Plastic Deformation Zone of Titanium Alloy

2-52 **Zeng Liying, Hong Quan, Mao Xiaonan, Qi Yunlian, Zhao Yongqing**
Northwest Institute for Nonferrous Metal Research, Xi´an 710016, China
Effect of Rare Earth Element Content on High Cycle Fatigue Property of Titanium Alloys

2-53 **Defu LI, Song CHEN, Daquan LI**
GRIMAT Engineering Institute Co., Ltd., Beijing, China
Experimental and simulation study for rewelding defects during the flow process of Semi-solid die casting

2-54 **Zheng Lv, Qiushi Liang, Changhui Mao, Zhimin Yang, Jian Yang, He Dai**
Advanced Electronic Materials Institute, GRIMAT Engineering Institute Co., Ltd., Beijing China
Enhanced mechanical properties and wear resistance of 2024Al alloy with CeO_2 addition

2-55 **Luo Hongjie**
Northeastern University, Shenyang, China
Preparation of Foamed Metal and Its Prospect in China

СЕКЦИЯ 3. Материалы для обеспечения жизнедеятельности человека

Биосовместимые и биодеградируемые материалы. Высокопористые керамические материалы. Материалы на основе диоксида циркония. Биоактивные пленки и покрытия. Материалы для тканевой инженерии и регенеративной медицины.

SECTION 3. Materials for insuring human life activity

Biocompatible and biodegradable materials. Highly-porous ceramics materials. Zirconia based materials. Bioactive films and coatings. Materials for tissue engineering and regenerative medicine.

3-1 **N.S. Sergeeva, I.K. Sviridova, V.A. Kirsanova, S.A. Akhmedova, P.A. Karalkin**
P. Hertsen Moscow Oncology Research Center, National Medical Research Radiological Center of the Ministry of Health of the Russian Federation, Moscow, Russia
Principles of preclinical biomedical studies for biomaterial-based scaffolds intended for bone defects replacement

3-2 **V.A. Volchenkova[1], E.K. Kazenas[1], E.A. Kuvshinova[2], N.V. Petrakova[1], V.B. Smirnova[1], N.A. Andreeva[1], O.N. Fomina[1], N.S. Sergeeva[2], S.M. Barinov[1], V.S. Komlev[1]**

[1]Baikov Institute of Metallurgy and Materials Science of the Russian Academy of Sciences (IMET RAS), Russia

[2]P.A. Herzen Moscow Oncology Research Institute — branch of the National Medical Research Radiological Centre of the Ministry of Health of the Russian Federation

Application of atomic absorption spectroscopy method for platinum content determination to study functionalization of bone substitute materials with anticancer drug

3-3 **A. Drozdov, Yu. Andreeva, O. Shapovalova, V. Vinogradov**

ITMO University

RF-controlled enzymatic composites based on sol-gel magnetite

3-4 **T.Yu. Kiseleva[1], A.S. Ilyushin[1], E.V. Lazareva[1], I.P. Ivanenko[1], E.V. Yakuta[1], A.V. Khakhalin[1], S.I. Zholudev[2], S.A. Kovaleva[3], E.T. Devyatkina[4], T.F. Grigoryeva[4], K.V. Frolov[5], G.P. Markov[6], U. Enhnaran[7], D.Sangaa[7]**

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[2]Technological Institute for Superhard and Carbon Materials, Troitsk, Russia

[3]The Joint Institute of Mechanical Engineering, Minsk, Belarus

[4]Institute of Solid state chemistry and mechanochemistry, Novosibirsk, Russia

[5]Shubnikov Institutre of Crystallography, Moscow, Russia

[6]Shmidt' Institute of the Physics of the Earth, Moscow, Russia

[7]Institute of Science and Technology, Ulaan Baator, Mongolia

Structure and magnetic properties of mechanochemically synthesized UHMWPE/ferrite composites as precursors for electromagnetic shielding materials

3-5 **A.B. Tsepelev[1], T.Yu. Kiseleva[2], S.I. Zholudev[3], S.A. Kovaleva[4], T.F. Grigoryeva[5], I.P. Ivanenko[1], E.T. Devyatkina[5], A.S. Ilyushin[1], N.Z. Lyakhov[5]**

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[2] Moscow M.V. Lomonosov State University, Physics faculty, Moscow, Russia

[3] Technological Institute for superhard and carbon materials, Troitsk, Moscow region, Russia

[4] The Joint Institute of mechanical engineering, Minsk, Belarus

[5] Institute of solid state chemistry and mechanochemistry, Novosibirsk, Russia

Electron irradiation resistance of the composite material structure based on ultra-high molecular polyethylene and boron carbide

3-6 **A.S. Kopylov[1,4], V.T. Shashkova[1], I.A. Matveeva[1], V.S. Kaplin[1], N.N. Glagolev[1], N.V. Minaev[2], P.S. Timashev[2,3], A.B. Solovieva[1]**

[1]N N Semenov Federal Research Center of Chemical Physics, Moscow, Russia

[2]Institute of Photonic Technologies, Research center "Crystallography and

Photonics", Troitsk, Moscow, Russia
[3]Institute for Regenerative Medicine, Sechenov University, Moscow, Russia
Features of the modification of polylactide by (meth)acrylate groups in organic solvents

3-7 **V.A. Kuznetsov, V.A. Obodov, M.V. Gilev, D.V. Nesterov**
I.*Ya. Postovsky Institute of Organic Synthesis, the Ural Branch of the Russian Academy of Sciences*
Development of biodegradable implant for lacrimal passage reconstruction with controlled tissue reaction

3-8 **I.A. Nasyrov, G.V. Mavrin, I.G. Shaikhiev**
Kazan Federal University
Investigation of the influence of ultrasonic treatment on the sorption properties of the pyrolysis product of wood waste

3-9 **Zhao Miaomiao[1], Yang Hongying[1], Tong Linlin[1], Yin Lu[1], Zhong Shuiping[2]**
[1] School of Metallurgy, Northeastern University, Shenyang, China
[2]State Key Laboratory of Comprehensive Utilization of Low-Grade Refractory, Gold Ores, Zijin Mining Group Co., Ltd, Shanghang, China
Study on interface phenomena during bacterial leaching of arsenopyrite

3-10 **Yin Lu, Yang Hongying,Tong Linlin**
School of Metallurgy, Northeastern University, Shenyang, China
Bioleaching of Different High Arsenic Refractory Minerals by Mixed Culture

3-11 **Yang Hongying, Zhao Qianfei, Tong Linlin**
School of Metallurgy, Northeastern University, Shenyang, China
Isolation and Screening of Cyanide- tolerant Strains

3-12 **Zhao Qianfei, Yang Hongying, Tong Linlin**
School of Metallurgy, Northeastern University, Shenyang, China
Effect of Carbonaceous Matter on Copper Behavior in Bioleaching from Waste Printed Circuit Boards

3-13 **Zhao Hefei[1,2], Yang Hongying[1,2],Shi Wenge[3], Lu Liangshan[3], Ma Pengcheng[3], Li Hong[3] and Chen Xi[1,2]**
[1] School of Metallurgy, Northeastern University, Shenyang, China
[2] Key Laboratory for Ecological Metallurgy of Multimetallic Mineral (Ministry of Education), Northeastern University, Shenyang, Liaoning, P. R. China

[3] Zhaojin Mining Industry Co., Ltd, Shandong, China
Effect of an additive TEA on thiosulfate leaching of low sulfur gold concentrate

3-14 **Zhao Qianfei[1, 2], Yang Hongying[1,2], Tong Linlin[1, 2]**
[1] Key Laboratory for Ecological Metallurgy of Multimetallic Mineral (Ministry of Education), Northeastern University, Shenyang, Liaoning, P. R. China;
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Effect of carbonaceous matter on copper behavior in bioleaching from waste printed circuit boards

3-15 **Guodong Chen [1, 2], Hongying Yang [1, 2], Huiqun Niu [1, 2],Linlin Tong [1, 2], Shuiping Zhong [3], Yuanyuan Liu[4]**

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Extraction and determination of humic acids in carbonaceous gold ores

3-16 **Li Jiafeng[1], Yang Hongying[1], Zhong Shuiping[2], Tong Linlin[1]**

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[2] State Key Laboratory of Comprehensive Utilization of Low-Grade Refractory Gold Ores, Zijin Mining Group Co., Ltd, Shanghang, China

Study on dynamic corrosion characteristics of mineral surface during bioleaching process

3-17 **Tong Linlin, Li Jiafeng, Yang Hongying**

School of Metallurgy, Northeastern University, Shenyang, China

Function and nutrient dependence of microbial community used for bioleaching

3-18 **Chen qiao[1], Tong Linlin[1], Chen Guimin[2], Lin Yiren[1], Zhang Fusheng[2], Wang Xiaosheng[2], Yang Hongying[1]**

[1] School of Metallurgy, Northeastern University, Shenyang, China;

[2] Hainan Shandong Gold Mining Co., Ltd., Ledong

Ring-by-ring analysis and models of retained mass of quartz in a laboratory Knelson concentrator

3-19 **Chen Yajing, Yang Hongying, Chen Guobao**

School of Metallurgy, Northeastern University, Shenyang, China

Study on Mechanical Activation and Leaching Kinetics of Arsenopyrite

3-20 **Liu Haipeng,Yang Hongying, Wu yanan, Chen Jiacheng, Zhang Qin**

School of Metallurgy, Northeastern University, Shenyang, China

Binding of SO_3 to gas phase oxides and metal oxides

3-21 **Zilong Liu[1], Hongying Yang[2*], Jiushuai Deng[3,4], Shuming Wen[4], Linlin Tong[2]**

[1] Tibet Huatailong Mining Development Co., Ltd, China Gold, Lhasa, China;

[2] School of Metallurgy, Northeastern University, Shenyang, China;

[3] School of Chemical & Environmental Engineering, China University of Mining & Technology (Beijing), Beijing, China;

[4] State Key Laboratory of Complex Nonferrous Metal Resources Clean Utilization, Faculty of Land Resource Engineering, Kunming University of Science and Technology, Kunming, China

Study on the new flotation technology of refractory argillated and oxidized copper-lead-zinc polymetallic ore at high altitude

3-22 **Zhao Hefei[1], Yang Hongying[1], Lu Liangshan[2], Ma Pengcheng[2], Chen Xi[1]**
[1] School of Metallurgy, Northeastern University, Shenyang, China
[2] Zhaojin Mining Industry Co., Ltd, Shandong, China
Effect of an additive on thiosulfate leaching of low sulfur gold concentrate

3-23 **Yang Hongying[1], Wang Gairong[1], Liu Yuanyaun[2], Tong Linlin[1], Jin Zhenan**
[1] School of Metallurgy, Northeastern University, Shenyang, China
[2] CNMC Luanshya Copper Mines Plc (CLM). Independence Avenue, Luanshya City, Zambia
Leaching of complex copper oxide ore in sulfuric acid by different grinding methods

3-24 **Wang Gairong[1], Yang Hongying[1], Liu Yuanyaun[2], Tong Linlin[1]**
[1] School of Metallurgy, Northeastern University, Shenyang, China
[2] CNMC Luanshya Copper Mines Plc (CLM). Independence Avenue, Luanshya City, Zambia
Study on copper occurrence of complex copper oxide ore in Luanshya mining area, Zambia

3-25 **Liu yuanyuan[1,2], Yang Hongying[2], Wang Gairong[2], Tong Linlin[2]**
[1]CNMC Luanshya Copper Mines Plc (CLM). Independence Avenue, Luanshya City, Zambia
[2] School of Metallurgy, Northeastern University, Shenyang, China
Selection of leaching process of the refractory copper-cobalt oxide ore in Zambia

3-26 **Zhao Suxing, Yang Hongying**
School of Metallurgy, Northeastern University, Shenyang, China
Impact of mechanical activation on copper leaching from chalcopyrite

3-27 **LIN Yiren, CHEN Guimin, Tong linlin, Chen qiao, Yang Hongying**
School of Metallurgy, Northeastern University, Shenyang, China
Knelson Concentrator Subsidence Model and Verification

3-28 **Wang Xin, Yang Hongying, Zhang Qin**
School of Metallurgy, Northeastern University, Shenyang, China
Study on the difference of acid and bacteria in nickel concentrate leaching

3-29 **Han Wenwen, Yang Hongying**
School of Metallurgy, Northeastern University, Shenyang, China
Study on the Effects of Different Chemical Agents on Cyanide Removal from Gold-extracting Cyanide Slag

3-30 **Wang Baoren, Yang Hongying, Tong Linlin, Zhang Qin**
School of Metallurgy, Northeastern University, Shenyang, China
Study on the recycling of valuable metals from waste printed circuit boards by leaching

3-31 **Qian Liu[1], Hongying Yang[2*], Linlin Tong[2]**
[1]Shanghai Collaborative Innovation Centre for WEEE Recycling, Shanghai Polytechnic University, Shanghai, China
[2]School of Metallurgy, Northeastern University, Shenyang, China
Fungal degradation of organic acids from Carbonaceous gold ores optimized by response surface methodology

3-32 **Jin Zhenan,Wang Bairun, Yang Hongying**
School of Metallurgy, Northeastern University, Shenyang, China
Leaching process of a difficult refractory copper-cobalt ore in Africa

3-33 **Chen Guodong[1], Yang Hongying[1], Niu Huiqun[1], Zhong Shuiping[2]**
[1] School of Metallurgy, Northeastern University, Shenyang 110819, China
[2] State Key Laboratory of Comprehensive Utilization of Low-Grade Refractory Gold Ores, Zijin Mining Group Co., Ltd, Shanghang, China
Extraction and Determination of Humic Acids in Carbonaceous Gold Ores

3-34 **Qiu Xuemin[1], Yang Hongying[1], Chen Guobao[1] , Zhong Shuiping[2], Cai Chuangkai[2]**
[1] School of Metallurgy, Northeastern University, Shenyang, China
[2] State Key Laboratory of Comprehensive Utilization of Low-Grade Refractory Gold Ores, Zijin Mining Group Co., Ltd, Shanghang, China
Inhibited Mechanism of Carboxymethyl Cellulose as a Galena Depressant in Chalcopyrite-Galena Separation Flotation of Cyanide Tailings

3-35 **Zhou Xiaowei, Yang Hongyin, Tong Linlin**
School of Metallurgy, Northeastern University, Shenyang, China
The Effect of Mechanical Activation on Minerals

3-36 **Tong Linlin[1], Song Yingjie[1], Jiang Chenggang[1], Chen Qiao[1], Yang Hongying[1], Chen Guimin[2], Zhang Fusheng, Liu Zilong**
[1] School of Metallurgy, Northeastern University, Shenyang, China;
[2] Hainan Shandong Gold Mining Co., Ltd., Ledong, China
Research and application of Knelson concentrator

СЕКЦИЯ 4. Инновационные методы получения и обработки материалов. “Зеленые” технологии

Получение материалов с аморфной, нано- и субмикрокристаллической структурой методами высокоэнергетического воздействия, интенсивной пластической деформации. Лазерно-информационные и аддитивные технологии. Структурирование поверхности, методы нанесения покрытий

Session 4. Innovative methods of obtaining and processing materials. Green technology

Obtaining of materials with amorphous, nano- and submicrocrystalline structure by high-energy effect, severe plastic deformation. Laser information and additive technologies. Surface structuring, methods of coating deposition

4-1 **S.A. Osipov, A.V. Alexandrov, S.Yu. Kuznetsov, A.A. Aleksandrov, A.V. Kulnev**
CENTER for Electron Beam Technology
Equipment and technologies for granular metallurgy

4-2 **A.V. Budanov[1], Yu.N. Vlasov[1], G.I. Kotov[1], E.V. Rudnev[2], V.E. Ternovaya[2], S.A. Ivkov[2]**
[1] Physics, Heat and Power System Department, Voronezh State University of Engineering Technologies, Voronezh, Russian Federation
[2] Solid State Physic and Nanostructures Department, Voronezh State University
Synthesis of a Cu_2SnS_3 ternary compound by thermal annealing of a metal layer in sulfur vapor

4-3 **A.S. Khapov, S.V. Chekanov, A.V. Voennov**
The Federal State Unitary Enterprise "All-Russia Research Institute of Automatics named after N.L. Dukhov"
Design of textured titanium coatings on a monocrystalline molybdenum substrate

4-4 **M.S. Vorobyov, V.N. Devyatkov, N.N. Koval, P.V. Moskvin, A.D. Teresov, V.V. Yakovlev**
Institute of High Current Electronics, Siberian Branch, Russian Academy of Sciences
Expansion of possibilities of electron source "SOLO" with a grid plasma cathode for modification of the surface of materials and products

4-5 **L. Gubacheva[1], I. Makarova[2], S. Andreev[3], A. Andreev[1] and D. Shevchenko[1]**
[1]Vladimir Dahl Luhansk National University, Lugansk
[2]Kazan Federal University, Naberezhnye Chelny, Russia
[3]Department of Public Administration and Management, State Telecommunication University, Kyiv, Ukraine
Prospects for the development of green technologies for producing alternative energy resources

4-6 **S. Dmitriev**
Research and Engineering Corporation "Mekhanobr-Tekhnika"
The technology of production of high-quality powders for additive manufacturing

4-7 **L.D. Ivanova, Yu.V. Granatkina, A.G. Malchev, I.Yu. Nikhezina**
Baikov Institute of Metallurgy and Materials Sciences RAS, Moscow, Russia
New technologies for obtaining thermoelectric materials

4-8 **L.D. Ivanova, Yu.V. Granatkina, A.G. Malchev, I.Yu. Nikhezina, M.V. Emel'yanov, D.S. Nikulin, M.G. Lavrent'ev**
Baikov Institute of Metallurgy and Materials Sciences RAS, Moscow, Russia

Thermoelectric and mechanical properties of $Bi_{0.4}Sb_{1.6}Te_3$ solid solution extruded from granules obtaining by melt crystallization

4-9 **K.V. Grigorovich, O.A. Komolova**
Baikov Institute of Metallurgy and Material Science of RAS
Development of digital twins and optimization of resource-efficient steelmaking technologies

4-10 **O.A. Komolova, K.V. Grigorovich**
Baikov Institute of Metallurgy and Material Science of RAS
Development of LF-software for modeling of rifining processes in a ladle – furnace

4-11 **O. Koplak, K. Kravchuk, A. Useinov, A. Talantsev, M. Hehn, P. Vallobra, S. Mangin, R. Morgunov**
Institute of Problems of Chemical Physics of RAS
Engineering of topology and magnetic relief of GdFeCo/IrMn structures by femtosecond laser

4-12 **E.G. Savenko, T.L. Korotenko**
Federal State Budgetary Scientific Institution "All-Russian Rice Research Institute"
New genetic resources and technologies in developing of new rice forms resistant to blast for greening the rice industry

4-13 **O.V. Krysina, V.V. Shugurov, N.A. Prokopenko, Yu.F. Ivanov, E.A. Petrikova, O.S. Tolkachev**
Institute of High Current Electronics SB RAS, Tomsk, Russia
Deposition, structure and properties of ion-plasma ZrNbN coatings with different concentration of niobium and nitrogen

4-14 **I.P. Kudarenko, R.R. Ismagilov, S.A. Malykhin, A.N. Obraztsov**
M.V. Lomonosov Moscow State University, Department of Physics
Machine learning approach for in-situ plasma thermometry during functional carbon material deposition.

4-15 **S.V. Dmitriev, N.V. Mikhailova**
Research and Engineering Corporation "Mekhanobr-tekhnika"
The technology of production of high-quality powders for additive manufacturing

4-16 **A.N. Nikitin, S.A. Cherebylo, E.V. Ipolitov, S.V. Kamaev, M.A. Markov, M.M. Novikov, V.V. Vnuk**
Institute on Laser and Information Technologies — Branch of Federal Scientific Research Center "Crystallography and Photonics" of RAS, Shatura, Moscow Region, Russia
Features of crosslinking polymerization in laser stereolithography

4-17 **Yu.F. Ivanov, E.A. Petrikova, A.D. Teresov, O.S. Tolkachev, D.A. Romanov**
Institute of High Current Electronics SB RAS, Tomsk, Russia
Combined electron-ion-plasma boriding of high-chrome austenitic steel

4-18 **D.A. Romanov[1], S.V. Moskovskii[1], V.E. Gromov[1], Yu. F. Ivanov[2], A.D. Filjakov[1]**

[1] *Department of natural science disciplines of Professor V. Finkel, Siberian State Industrial University, Novokuznetsk, Russia*
[2] *Institute of High Current Electronics SB RAS, Tomsk, Russia*
Structure and properties of the electromagnetic starter's contacts with the electro-explosive CuO-Ag coating

4-20 **S.V. Dmitriev, N.V. Mikhailova, A.O. Mezenin**
Research & Engineering Corporation Mekhanobr Tekhnika
Technology of production of high-quality powder materials for additive technologies and metallurgy

4-21 **Sun Fengyue**
Jilin University, Changchun, China
Studies on the opportunities of producing superpure graphite from the high-carbone rocks of the Jiamusi-Hankaiskaya province

4-22 **D Khrapov[1], M Surmeneva[1*], A Koptioug[2], R Surmenev[1]**
[1]Physical Materials Science and Composite Materials Centre, *National Research Tomsk Polytechnic University*, Tomsk, Russia
[2]Mid Sweden University, Östersund, Sweden
Microstructure investigation of Ti-26Nb alloy manufactured from elemental powders by electron beam melting

4-23 **DU Kaiping[1,2,3], LI Shengfeng[1,2,3], SHEN Jie[1,2,3], GAO Xiangzhou[1,2,3], YU Yueguang[1,2,3]**
[1] *Beijing General Research Institute of Mining and Metallurgy, Beijing, China;*
[2] *Beijing Key Laboratory of Special Coating Materials and Technology, Beijing;*
[3]*Beijing Industrial Parts Surface Hardening and Repair Engineering Technology Research Center, Beijing*
Effect of 316L stainless steel powder size distribution on selective laser melting process

4-24 **WANG Xu[1,2,3], HUANG En-ze[2,3], YUYue-guang[2,3], DU Kai-ping[2,3], LI Zheng-qiu[2,3]**
[1] *Northeastern University, School of Materials Science and Engineering, Shenyang, China;*
[2] *BGRIMM Technology Group, Beijing, China;*
[3] *Beijing Engineering Research Center on Surface Strengthen and Restoration of Industrial Parts, Beijing, China*
Effect of laser energy density on microstructure and properties of laser cladding coating by powder feeding method

4-25 **Shaopeng Niu, Kesong Zhou, Chunming Deng, Liping Xu, Min Liu, Wei Zeng, Zhikun Chen**
Guangdong Institute of New Materials, National Engineering Laboratory for Modern Materials Surface Engineering Technology & The Key Lab of Guangdong for Modern Surface Engineering Technology, Guangzhou, China

Formation mechanism of island CoO in La-Sr-Co-Fe oxygen transport membrane deposited by low pressure plasma spraying-thin film technology

4-26 Wu Yan[1], Xin Haixia[2], Xu Yujun[2], Liu Jianan[3]

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[2] School of Resources and Materials, Northeastern University at Qinhuangdao Branch, Qinhuangdao, China

[3] School of Chemistry and Chemical Engineering, Bohai University, Jinzhou, China

Preparation of ultrafine α-Al_2O_3 powder from fly ash by ammonium sulfate roasting technology

4-27 **Ren Xianghui[1] Yu Chen[1] Zhang Wenjie[2]**

[1] Guangdong Welding Institute (China-Ukraine E.O.Paton Institute of Welding), Guangzhou,China;

[2] Shenyang University of Technology, Liaoning Shenyang, China

The Microstructure and Mechanical Properties of 308L Alloy Fabricated by Micro-plasma Arc Additive Manufacturing

4-28 **Chunming Deng, Shaopeng Niu, Kun Yang, Wei Zeng, Zhikun Chen**

Guangdong Institute of New Materials, National Engineering Laboratory for Modern Materials Surface Engineering Technology & The Key Lab of Guangdong for Modern Surface Engineering Technology, Guangzhou, China

Plasma sprayed high performance insulating coating and its applications in nuclear fusion

4-29 **Min Liu, Kesong Zhou, Renzhong Huang, Yingchun Xie**

Guangdong Institute of New Materials, National Engineering Laboratory for Modern Materials Surface Engineering Technology&The, Key Lab of Guangdong for Modern Surface Engineering Technology, Guangzhou, China

The development and applications of cold spray technology

4-30 **Junmin Zhang, Ming Wen, Jialin Chen, Junmei Guo, Weiming Guan**

State Key Laboratory of Advanced Technologies for Comprehensive Utilization of Platinum Metals, Kunming Institute of Precious Metals, Kunming, Yunnan, China

The failure mechanism of NiPtSi multilayer films

4-31 **Shaopeng Niu, Kesong Zhou, Chunming Deng, Liping Xu, Min Liu, Wei Zeng, Zhikun Chen**

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Formation mechnism of island CoO in La-Sr-Co-Fe oxygen transport membrane deposited by low pressure Plasma spraying-thin film technology

4-32 **Simakov S.V., Ashmarin A.A., Vinogradova N.A., Nikitushkina O.N.**
Baikov Institute of Metallurgy and Materials Science
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4-35 **Antanovich A.A.[1], Kolesnikov S.A.[2]**

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Tensile strength of carbon composite materials: Influence of binding matrix

4-36 **Baturin A.A.[1,2], Lotkov A.I.[1], Grishkov V.N.[1], Rodionov I.S.[1]**

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Study of hydrogen redistribution in Ti49.1Ni50.9 alloy (at %) with nanocrystalline structure by resistometric and durometer methods