



**XVI International Symposium on
“Combustion and Plasma Chemistry. Physics and Chemistry
of Carbon and Nanoenergetic Materials”**

PROGRAMM

October 1-3, 2025

Almaty, Kazakhstan



Organizers

- Institute of Combustion Problems
- Al-Farabi Kazakh National University
- Kazakh-British Technical University

Symposium Committee

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Yongting Zheng, China

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DAY 1: WEDNESDAY, OCTOBER 1, 2025

08.30 – 09.00 **REGISTRATION:**
*Faculty of Chemistry and Chemical Technology,
Al-Farabi Scientific Library, 4th floor, Conference Hall*

09.00 – 09.30 **OPENING CEREMONY, 416 room**

Session 1: Plenary Session **Session Chairperson: Zulkhair Mansurov**

09.30 – 10.00 *Сергей Алексеенко (Russia)*
**Технологии низкоэмиссионного сжигания
водотопливных смесей**

10.00 – 10.30 **Plenary lecture**
*Bhaskara Rao Latchipatula, Deepan Chowdhury, Alexander Yakovchuk,
Jagadish Das, Eli Flaxer, **Michael Gozin** (Israel)*
**Development of Novel High Energy Density Liquid Fuels
for Advanced Propulsion Systems**

10.30 – 11.00 **Plenary lecture**
Yongting Zheng and Yuchen Yuan (China)
**Nano-Eutectic Structured Al₂O₃-ZrO₂ Composite Powder Fabricated via
Combustion Synthesis-Air Atomization for Plasma Spray Ceramic
Coatings**

11.00 – 11.30 **Coffee Break, 410 room**

11.30 – 12.00 **Plenary lecture**
*Ruiqi Shen, Jianbin Xu, Xiaowei Zang,
Yinghua Ye, Xuejun Jiang, Yuan Lai (China)*
**Metal-Oxide-Metal-Semiconductor Energetic Transistor (MOMSET)
Linking with Artificial Neural Network**

12:00 – 12:30 **Plenary lecture**
*Fail Sultanov, Baglan Bakbolat, Almagul Mentbayeva, Bauyrzhan
Myrzakhmetov (Kazakhstan)*
**Room-temperature and cryogenic hydrogen storage in pore-optimized
carbon**

12:30 – 13:00 **Plenary lecture**
*Victor Abrukov, Weiqiang Pang, Darya Anufrieva, Daniil Sapyorov
(Russia)*
**NEURAL NETWORKS IN DEVELOPMENT OF HIGH-ENERGY MATERIALS
GENOME**

13.00 – 14.00 **Lunch**

Session 2, Chairperson: Ruiqi Shen

14.00 – **Keynote lecture**

14.30 **Khairulin S.R., Yashnik S.A., Salnikov A.V., Ismagilov Z.R.** (Russia)

**Structured Catalysts for Solving Urgent Problems
of Environment Protection and Green Energy**

ORAL SESSION	
416 room	408 room
Chairperson: Yerdos Ongarbayev	Chairperson: Faiz Sultanov
14.30 – Yerdos Ongarbayev , Yerbol Tileuberdi, 14.50 Zhannur Myltykbayeva, Yerzhan Imanbayev, Ainur Zhambolova (Kazakhstan) NEW METHODS OF OIL AND NATURAL BITUMENS OBTAINING AND EXTRACTION	Н.Г. Приходько* , М.А. Елеуов, Н.Б. Рахымжан, Ә.Ә. Әбдісаттар, К. Аскарулы, А.Б. Толынбеков, А.Т. Таурбеков (Қазақстан) ПОКРЫТИЕ ПОВЕРХНОСТИ МЕТАЛЛИЧЕСКИХ ТОКОСЪЕМНИКОВ ЭЛЕКТРОХИМИЧЕСКИХ НАКОПИТЕЛЕЙ ЭНЕРГИИ ГРАФЕНОМ В УГЛЕВОДОРОДНОМ ПЛАМЕНИ
14.50 – Boris Aduev , Gennadiy Belokurov, Gairat 15.10 Garifullin, Igor Liskov, Denis Nurmukhametov (Russia) Study of the possibility of using laser radiation as a burner device in coal-fired boilers	Darya Anufrieva , Victor Abrukov, Vladica Bozic, Daniil Sapurov (Россия) Determination of Combustion Law Parameters from Noisy Experimental Data Using a Novel Sequential Neural Network Approach
15.10 – U.K. Makhmanov , T.A. Chuliev, B.A. Aslonov 15.30 (Uzbekistan) STABILITY OF CARBON NANOSTRUCTURES TO EXTERNAL INFLUENCES	Б. Лесбаев , М. Ауельханкызы, Г. Устаева, Н.Рахымжан, А. Жамаш (Қазақстан) Композит на основе нанопористого углерода и нанотрубок декорированных наночастицами платины для хранения водорода
15.30 – Zhazira Supiyeva , Balaussa Balgabayeva, 15.50 Qamar Abbas (Kazakhstan) ELECTROCHEMICALLY REDUCED GRAPHENE OXIDE-BASED NANOCOMPOSITES FOR ENERGY STORAGE	Aliya Temirkhan , Perizat Komekbayeva, Saule Aidarova (Қазақстан) Nickel Phosphide Catalyst Supported by Steam Activated Carbon Material for Hydroisomerisation Reaction of n-Hexane

15.50-16:20	Coffee Break, 410 room	
16.20 – 16.40	Anatolii Chernov* , Artëm M. Dmitriev, Andrey V. Cherepanov, Denis Knyazkov (Russia) <i>Saturation current in flames – towards validation of CH chemistry in kinetic mechanisms</i>	Eugene Salgansky , Igor Sedov, Weixing Zhou (Russia) <i>Thermodynamic assessment of hydrogen production during methane pyrolysis in a filtration combustion reactor with a moving bed</i>
16.40-17:00	Gavrilyuk O.M. , Semenova S.A. (Russia) <i>Comparative characteristics of the coupon obtained on the basis of the modified coal tar</i>	G.Yar-Mukhamedova* , N. Sakhnenko, T. Nenastina, A. Kemelzhanova, D. Zellele (Kazakhstan) <i>Electrodeposition of corrosion-resistant coatings from cobalt alloys with improved physical and mechanical properties</i>
17:00-17:20	Александр Шафоростов (Kazakhstan) <i>Thermo Scientific Apreo ChemiSEM — новые рубежи в интеграции электронной микроскопии и элементной идентификации</i>	V.M. Kislov , Yu.Yu. Tsvetkova, E. N. Pilipenko, A. Yu. Zaichenko, D. N. Podlesniy, M.V. Tsvetkov, E. A. Salgansky, M.V. Salganskaya (Russia) <i>Selection of the optimal calcium-based additive for sulfur absorption at filtration combustion</i>
15:00-18:00	Poster Session, 4th floor, Conference Hall	
18.00	WELCOME PARTY, 410 ROOM	

DAY 2: THURSDAY, OCTOBER 2, 2025

Session 3: Plenary Session

Session Chairperson: *Michael Gozin*

09.30 – Plenary lecture

10.00 **Andrei Cherepanov***, Denis Knyazkov, Vitaly Kisilev (Russia)

An experimental and theoretical study of formation of cations in ethanol flames

10.00 – Plenary lecture

10.30 *Jialu Guan (China)*

Research on Pyrolysis Mechanisms of Nanoenergetic Materials

10.30 – Coffee Break, 410 room

11.00

408 room

Chairperson: *Nadirov R.K.*

409 room

Chairperson: *Khairulin S.R.*

11.00 – **Gauhar Mussabek**, Gulmira Yar-Mukhamedova, Alexander Zaderko, Vladislav Lisnyak (Kazakhstan)

11.20 Gas-phase functionalization of carbon surfaces with fluorine- and sulfur-containing groups

Oleg Prikhodko*, Aru Kozhakenova, Alexander Kolobov, Nazim Guseinov, Zhandos Tolepov, Yerzhan Mukhametkarimov, Guzal Ismailova, Alimzhan Kapanov, Suyumbika Maksimova, Svetlana Peshaya (Kazakhstan)
Possibility of the ion-plasma sputtering method for obtaining amorphous phase-transition GST films modified with nitrogen

11.20 – *А.Р. Керимкулова, Л.Ф. Веласко, Е.Ж. Ермолданов, А.Жумагалиева, А.Н. Сабитов, З.А.Мансуров (Kazakhstan)*

11.40 Синтез углеродных материалов из биомассы для эффективной сорбции токсичных газов

Кудашева А.Б., Хазимов М.Ж., Урмашев Б.А., Азизов, Мансуров З.А. (Kazakhstan)
КОМПЛЕКСНОЕ ИССЛЕДОВАНИЕ ЭФФЕКТИВНОСТИ СЖИГАНИЯ УГЛЯ В КОТЛАХ МАЛОЙ МОЩНОСТИ НА ОСНОВЕ ЭКСПЕРИМЕНТАЛЬНОГО АНАЛИЗА И МАТЕМАТИЧЕСКОГО МОДЕЛИРОВАНИЯ

11:40 – **Yashnik S.A. ***, Salnikov A.V., Khairulin S.R. (Russia)

12:00 Diesel Oxidizing Catalyst: Prospects For Use In Diesel Particulate Filters

Jakpar Jandosov, Alzhan Baymenov, Dmitriy Chenchik, Maria Bernardo, Zulkhair Mansurov, Aitugan Sabitov, Yerlan Doszhanov, Joaquin Silvestre-Albero (Kazakhstan)
Assessment of Phenolic and Indolic Compounds Removal using Agro-Waste-derived Surface Modified Nanoporous Carbon Adsorbents: Comparative Study

12:00 – **Zhandos Tauanov**, Aidana
12:20 Tabynbayeva, Madina Suleimenova
(Kazakhstan)

**SYNTHETIC POROUS MATERIALS
BASED ON AGRICULTURAL WASTE FOR
WATER TREATMENT: SYNTHESIS,
CHARACTERIZATION AND
PERFORMANCE**

Jakpar Jandosov, **Dmitriy Chenchik**, Alzhan
Baymenov, Zulkhair Mansurov, Sergey
Mikhalovsky, Joaquin Silvestre Albero
(Kazakhstan)

**Biomass derived Nanoporous Carbon
Honeycomb Monoliths for Environmental
Lipopolysaccharide Adsorption from Aqueous
Media**

13.00 – **Lunch**
14.00

Session 4, Chairperson: **Meiram Atamanov**

14.00 – **Keynote lecture**

14.30 *Sh. Sultakhan, A.Baibotayeva, B.Khalkhabay, S.Azat (Казахстан)*

TRANSFORMING WASTE INTO SOLUTIONS: NOVEL WATER TREATMENT TECHNOLOGIES FOR A SUSTAINABLE FUTURE

ORAL SESSION	
408 room	409 room
Chairperson: Eugene Salgansky	Chairperson: V.M. Kislov
14.30 – Semyon Agarkin* , Anatoliy Chernov, Andrei Cherepanov, Denis Knyazkov (Kazakhstan)	Надиров Р.К. (Казахстан)
14.50 <i>An investigation of cation chemistry in hydrogen-oxygen flames doped with n-butanol</i>	Комплексная гидрохимическая переработка золошлаков Алматинской ТЭЦ-2
14.50 – Фоменко С.М. , Толендиулы С., Родивилов С.М., Рахым Н.Т., Исмаилов М.Б., Жунусов Р. (Kazakhstan)	М. Nazhipkyzy , A. Seitkazinova, M. Yeleuov, A.T. Issanbekova, K.K. Kudaibergenov, A. Otenov, A. Ashirali, A. Zhaparov (Kazakhstan)
15.10 Влияние пористости на характеристики горения твердых ракетных топлив	Cucumber Peel-Based Carbon as Renewable Electrodes for Supercapacitors
15.10 – Pavlenko V.V. , Zakharov A.Yu., Ayaganov Zh.E., Mansurov Z.A. (Kazakhstan)	M.I. Tulepov , Z.K. Myshyrova, Shirullah Rahmani, M. Yessengeldi (Kazakhstan)
15.30 <i>Modern methods of production and application of nanoporous carbon materials</i>	Synthesis and Characterization of Rice Husk Ash Reinforced Polysulfide/Epoxy Polymer Composites
15.30 – Alzhan Baimenov , Chingis Daulbayev, Harry K. Megbenu, Armanbek Nursharip and Vadym Mochalin (Kazakhstan)	Атаманов Мейрам (Kazakhstan)
15.50 SYNERGISTIC EFFECT OF Ti₃C₂T_x MXENE/CRYOGEL COMPOSITES IN ADSORPTION-PHOTOCATALYSIS PROCESS FOR METHYLENE BLUE REMOVAL FROM WATER	Исследование извлечения кобальта и никеля из литий-ионных батарей методом СВС-центрифугирования
15.50 – Coffee Break, 410 room	
16.10-16:30 Poster Session, 4th floor, Conference Hall	
16:30-16:50 Plenary lecture	
	Zulkhair Mansurov (Kazakhstan)
	Advanced Nanocomposite Materials for Ecology and Industrial Applications
16:50-17:10 Closing ceremony	
18.00 Banquet	

DAY 3: FRIDAY, OCTOBER 3, 2025

Institute of Combustion Problems

**Круглый стол на тему:
«ПРАКТИКО-ОРИЕНТИРОВАННОСТЬ ЛАБОРАТОРНЫХ
РАБОТ ПО СПЕЦИАЛЬНОСТЯМ НАНОМАТЕРИАЛЫ И
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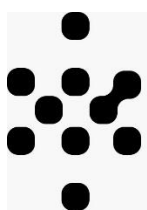


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POSTER SESSION

1. Development of methods for preparation biochar based fertilizer with iodine-organic complex

Aitugan Sabitov, Yerlan Doszhanov, Karina Saurykova, Didar Bolatova (Kazakhstan)

2. Технология получения интерметаллидов на основе Ni-Al-Fe-C, используемых в качестве легирующих добавок для получения сплавов с повышенной прочностью

Адильбаева Г.М., Балтабай А.А., Тулепов М.И. (Казakhstan)

3. Использование золошлаковых отходов ТЭЦ для получения керамических изделий

Адильбаева Г.М., Балтабай А.А., Байракова О.С., Бийсенбаев М.А., Аронов Д. (Казakhstan)

4. ТЕХНОЛОГИЧЕСКИЕ РЕШЕНИЯ ПО УДАЛЕНИЮ МИКРОПЛАСТИКА ИЗ МОДЕЛЬНЫХ ВОД

К.К. Алимova, А.Р. Керимкулова, Н.С. Саликова (Казakhstan)

5. ИСПОЛЬЗОВАНИЯ МЕТАЛЛУРГИЧЕСКИХ ШЛАКОВ ДЛЯ ПОЛУЧЕНИЯ СТРОИТЕЛЬНОЙ КЕРАМИКИ

Балтабай А.А., Адильбаева Г.М., Аронов Д., Байракову О.С., Бийсенбаева М. А. (Казakhstan)

6. Исследование теплового режима горения Fe-Al-SiO₂ с горючими связующими и использование их в нагревательных элементах

Балтабай А.А., Адильбаева Г.М., Кудьярова Ж.Б., Тулепов М.И. (Казakhstan)

7. Electrospun Lignin-Based Carbon Nanofibers Modified with Nanosilicon for Battery Applications

A. Otenov, M. Nazhipkyzy, A. Seitkazinova, S.V. Agasieva (Kazakhstan)

8. Gas sensing properties of polyaniline towards nitrogen dioxide (NO₂) at room temperature

Ramazan Kazhdanbekov, Aigerim Imash, Gaukhar Smagulova (Kazakhstan)

9. PET waste-derived membranes for lithium-ion battery separators

Zhansaya Arkasheva, Ayaulym Belgibayeva, Arailyim Nurpeissova (Kazakhstan)

10. Effect of Fullerene Additives on Tribological Properties of Lubricating Oils for Bearings

D.V. Ismailov, D.V. Chernyshev, Zh.T. Nakysbekov, M.B. Aitzhanov, G. Partizan, G.S. Suyundykova (Kazakhstan)

11. Sustainable Hydrogen Storage via Upcycled Graphite from End-of-Life Lithium-Ion Batteries

Mukhammed Kenzhebek, Fayil Sultanov, Almagul Mentbaeyva (Kazakhstan)

12. Eco-efficient metal recovery from end-of-life LiCoO₂ cathodes via mechanochemical processing

Lyazzat Mussapyrova, Kaster Kamunur, Aisulu Batkal (Kazakhstan)

13. Сынап пен метилен көгін жоюға арналған синтетикалық цеолиттер мен нанокөмпазиттер

Сулейменова М.Е., Тауанов Ж.Т. (Kazakhstan)

14. Synthesis and characterization of N-doped activated carbon/TiO₂ composite

Makhabbat Kunarbekova, Mukhtar Alipuly, Laura Seymukhanova, Inabat Sapargali, Kanykeshova Akerke, Seitkhan Azat (Kazakhstan)

15. Green Recovery of Critical Metals from Lithium-Ion Battery Cathodes Using Choline Chloride/Pyrogallol Deep Eutectic Solvent

Milikhat B., Kaster Kamunur, Aisulu Batkal, Lyazzat Mussapyrova (Kazakhstan)

16. Production of porous NiTi alloys via self-propagating high-temperature synthesis based on the magnesiothermic reduction of metal oxides

Baatarbek N., Kamunur K. (Kazakhstan)

17. ИССЛЕДОВАНИЕ ЭФФЕКТИВНОСТИ АНТИБАКТЕРИАЛЬНЫХ СВОЙСТВ КОМПОНЕНТОВ КАРБОНИЗИРОВАННОГО МАТЕРИАЛА ДЛЯ ПРИМЕНЕНИЯ В БРОНЕТЕХНИЧЕСКИХ СИСТЕМАХ

Мұсатай Е.А., Тулепов М.И., Адильбаева Г.М. (Kazakhstan)

18. Углеродные многоканальные блоки для очистки воздуха

Мұсатай Е.А., Тулепов М.И. (Kazakhstan)

19. Novel materials - efficient catalysts for methane decomposition to hydrogen and/or synthesis gas

Makayeva N., Yergaziyeva G., Mambetova M., Anissova M., Mylytkbaeva L., Dossumov K. (Kazakhstan)

20. Structure and properties of iridium-doped DLC films obtained by magnetron sputtering

Fariza Bekmurat, Alexandr Ryaguzov, Nazim Guseinov, Renata Nemkayeva, Raiymbek Yersaiyn (Kazakhstan)

21. The Influence of Carbon Pore Structure on Ion Adsorption and Dynamics: insights from NMR and Electrochemical Studies

Roman Mysyk, Nahom Enkubahri, Daniel Carriazo, Juan Miguel López del Amo (Spain)

22. Получение микрокристаллической целлюлозы из агробиомассы и разработка биополимерных композитных плёнок на её основе

Рахимова Бибигул, Алтынов Еркебулан, Жантукеев Улан, Бексейтова Калампыр, Азам Сейтхан, Кудайбергенов Кенес (Kazakhstan)

23. Synthesis of Si-Substituted MAX Phase via in situ Reactive Sintering

Shynggyskhan Sultakhanan, Ruslan Nurlybayev, Zhansaya Kabyrbekovaa, Azat Seitkhan (Kazakhstan)

24. Effect of Modified Aluminum on the Combustion Characteristics of Solid Rocket Propellants

Sadykov Bakhtiyar, Bakkara Ayagoz, Shen Ruiqi, Artykbayeva Aida, Khairullina Ainur, Maten Alua (Kazakhstan)

25. MECHANOCHEMICAL TREATMENT OF ASH IN COMBINATION WITH SHS FOR THE PRODUCTION OF THERMAL INSULATION MATERIALS

Maten A.E., Khairullina A.S., Artykbayeva A.B., Yuldashev N.K., Iskakov A.N. (Kazakhstan)

26. Экспериментальное исследование температурных профилей горения водоугольных смесей различного состава

Таскын М., Мансуров З.А., Азизов З.М. Топанов Б.Г., Алексеенко С.В. (Kazakhstan)

27. Microstructural and Corrosion Properties of Electrodeposited Chromium-Graphene Composite Coatings Under Varying Deposition Temperatures

Daniel M. Zellele (Kazakhstan)

28. Enhancing Purity and Structural Integrity in Verneuil-Grown Gemstones through Thermal Gradient Control

Huang Maohua (Kazakhstan)

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