

Программа конференции “НІТ-2017”

«От молекулярного анализа гуминовых веществ – к природоподобным технологиям»

Program of the conference “НІТ-2017”

“From molecular analysis of humic substances – to nature-like technologies”

15 октября, 2017, воскресенье – October 15, 2017, Sunday

День заезда Arrival Day

20:30 – 23:30

Автобусная экскурсия «Ночная Москва» - при наличии желающих

Bus Excursion “Moscow at night” - depending if we have those who wants to join

16 октября, 2017, понедельник – October 16, 2017, Monday

08:30 – 09:30

Регистрация участников конференции

Registration of the conference participants

Фойе аудитории В2 – Международный центр им. Лосева (Лосев-Центр), Шуваловский корпус на новой территории МГУ, 1-й этаж, сектор В

Lobby of the B2 lecture hall – the Losev international center, the Shuvalovsky building on the new territory of the MSU, the first floor, sector B

09:30 – 10:00

Открытие конференции

Opening of the conference

Аудитория В2 – Лосев-Центр, Шуваловский корпус, 1-й этаж, сектор В

Lecture hall B2 – the Losev Center, Shuvalov building, the 1st floor, sector B

Приветственные адреса

Welcome Addresses

Валерий Васильевич Лунин, академик РАН, декан Химического факультета МГУ

Valeriy Lunin, member of RAS, Dean of the Department of Chemistry, Lomonosov MSU

Сергей Алексеевич Шоба, член-корреспондент РАН, декан факультета почвоведения МГУ

Sergey Shoba, corresponding member of RAS, Dean of the Department of Soil Science of the Lomonosov MSU

Андрей Леонидович Иванов, академик РАН, Почвенный институт имени В.В.

Докучаева Россельхозакадемии

Andrey Ivanov, member of RAS, Dokuchaev Soil Institute of RAAS

Konstantin Korsakov, President of the Life Force Group Ltd., general sponsor of the HIT-2017 conference

Константин Вячеславович Корсаков, Президент группы компаний «Сила жизни», генеральный спонсор конференции HIT-2017

Ирина Васильевна Перминова, Приветствие от Оргкомитета конференции
Irina Perminova, Welcome from the Organizing Committee

Пленарные лекции – Plenary lectures

Председатели секции:

Chairs of the session:

10:00-10:45 (Plenary lecture – Пленарный доклад)

Sunghwan Kim, Kyungpook National University, Dague, Republic of Korea

Understanding Natural Organic Matter at the Molecular Level: van Krevelen Diagram and Beyond

10:45 – 11:30 (Plenary lecture – Пленарная доклад)

Robert Spencer, Florida State University, Tallahassee, FL, USA

Molecular-level Insights into the Reactivity and Optical Properties of Dissolved Organic Matter in Aquatic Ecosystems

11:30 – 12:00

Coffee-break – Кофейная пауза

Session 1. Exploring molecular structures and properties of humic substances using advanced analytical and information technologies

Секция 1. Изучение молекулярной структуры и свойств гуминовых веществ с помощью передовых аналитических и информационных технологий

Chairs of the session:

Председатели секции:

12:00 – 12:30 (Keynote lecture – Ключевая лекция)

Evgeny Shirshin, Department of Physics, Lomonosov Moscow State University, Moscow, Russia

Theoretical description of photophysical mechanisms responsible for similarity of optical properties of humic substances

12:30 – 12:45

Vera Tichova, Institute of Organic Chemistry, Novosibirsk, Russia

Principles of a Humic Database Formation Based on the IR-EXPERT Information-Analytical System

12:45 – 13:00

Yury Kostyukevich, Skolkovo Technology Institute, Moscow, Russia

Revealing Chemical Properties of Individual Compounds in Complex Mixtures Using in-ESI Source H/D Exchange Combined with FT ICR MS

13:00 – 14:00

Lunch – Обед

Session 1. Exploring molecular structures and properties of humic substances using advanced analytical and information technologies

Секция 1. Изучение молекулярной структуры и свойств гуминовых веществ с помощью передовых аналитических и информационных технологий

Chairs

Председатели:

14:00 – 14:15

Ekaterina Isotova, “Nobel” LLC, Saint Petersburg, Russia

Application of HPLC, HPLC-MS for structural analysis of water-soluble fraction of lignin

14:15 – 14:30

Nikita Sobolev, North (Arctic) Federal University, Arkhangelsk, Russia

Selective Extraction Method of the Unconverted Humic Acids from the Peat Biomass

14:30 – 14:45

Irina Sokolova, National Research Tomsk State University, Tomsk, Russia

Spectral and Photochemical Properties of Humic Acids with Different Genesis of Organic Raw Materials

14:45 – 15:00

Svetlana Patsaeva, Department of Physics, Lomonosov Moscow State University

Absorption Indexes and Derivative Spectroscopy as Tools for Rapid Classification of Humic Acids Isolated from Various Products

15:00 – 15:15

Viktoriya Kozlova, Dmitry Mendeleev University of Chemical Technology of Russia, Moscow, Russia

Quantitative Determination of Humic Acids in Peat and Soils

15:15 – 15:30

Dmitry Osolodkin, Institute of Poliomyelitis and Viral Encephalitis, Chumakov FSC R&D IBP RAS

Chemoinformatic Approach to Identify Antiviral Components of Humic Substances

15:30 – 16:00

Coffee-break – Кофейная пауза

Session 3. Humics-based materials and nature-like technologies for ecosystem health, agriculture, and remediation

Секция 3. Гуминовые продукты и природоподобные технологии для здоровья экосистем, сельского хозяйства и рекультивации

16:00 – 16:30 (Keynote lecture – Приглашенная лекция)

Valery Kalinitchenko, Institute of Soil Fertility of South Russia, Rostov region, Russia

Biogeosystem Technique – Design of a Dispersed Soil System, Intra-soil Moistening, Intra-soil Waste Recycling – Priority Conditions for the Humic Substances Synthesis and Stability

16:30 – 16:45

Nadine Braun, GmbH, Grevenbroich, Germany

Importance of Fulvic Acid in Agricultural and Industrial Applications

16:45 – 17:00

Dmitry Khomyakov, Department of Soil Science, Lomonosov MSU, Moscow, Russia

Effect of Humic Fertilizers on Crop and Quality of Anethum graveolens L.

17:00 – 17:15

Oral Zhilkibaev, Kazakh National University named after Al-Faraby, Almaty, Kazakhstan

Universal Organic Fertilizers "EldORost"

17:15 – 17:30

Olga Shapoval, National Research Institute for Agrochemistry, Moscow, Russia

New humic fertilizers for agriculture

Ольга Александровна Шаповал, ВНИИ Агрохимии, Москва, Россия

Новые гуминовые удобрения для сельского хозяйства

17:30 – 18:30

General Discussion – questions to all speakers of the day

Moderators: Irina Perminova (Lomonosov MSU, Russia) and Teodoro Miano (University of Bari, Italy)

18:30 – 21:00

Get-together

Фуршет-знакомство

October 17, 2017, Tuesday – 17 октября 2017, вторник

Section 2. Ecosystem metabolomics: humic substances in soil and water ecosystems under conditions of changing climate and anthropogenic pollution and their impact on living organisms

Секция 2. Экосистемная метаболомика: гуминовые вещества в почвах и водах в условиях изменения климата и антропогенной нагрузки и их влияние на живые организмы

Аудитория В2 – Шуваловский корпус, 1-й этаж, сектор В

Lecture hall B2 – Shuvalov building, the 1st floor, sector B

Chairs:

Председатели:

9:30 – 10:00 (Key Note Lecture – Приглашенная лекция)

Aron Stubins, Skidaway Institute of Oceanography, Marine Sciences, University of Georgia, Savannah, USA

Molecular Hysteresis of Riverine Organic Matter

Арон Стабинс,

Молекулярный гистерезис речного органического вещества

10:00 – 10:30 (Key Note Lecture – Приглашенная лекция)

Nadezhda Kudryasheva, Institute of Biophysics SB RAS, Krasnoyarsk, Russia,

Mechanisms of detoxification by humic substances. Bioluminescent monitoring

Надежда Степановна Кудряшева, Институт Биофизики СО РАН, Красноярск, Россия

Механизмы детоксикации гуминовыми веществами: биолюминесцентный мониторинг

10:30 – 10:45

Natalya Kovaleva, Department of Soil Science of Lomonosov MSU, Moscow, Russia

Lignin Phenols as Biomarkers of Palaeoenvironments

Наталья Олеговна Ковалева, Факультет почвоведения МГУ, Москва, Россия

Фенолы лигнина как биомаркеры палеоэкосистем

10:45 – 11:00

Alisa Aleshina, Department of Geology of MSU, Moscow, Russia

Transformation of Dissolved Organic Matter and Its Organo-Mineral Complexes in Natural Waters during the Photodestruction

11:00 – 11:30 Coffee-break – Кофейная пауза

Section 2. Ecosystem metabolomics: humic substances in soil and water ecosystems under conditions of changing climate and anthropogenic pollution and their impact on living organisms

Секция 2. Экосистемная метаболомика: гуминовые вещества в почвах и водах в условиях изменения климата и антропогенного загрязнения и их влияние на живые организмы

Chairs:

Председатели:

11:30 – 12:00 (Keynote lecture – приглашенный доклад)

Mariya Zyкова, Siberian State Medical University, Tomsk, Russian Federation

Immunotropic Activity of Peat Humic Acids

Мария Зыкова, Сибирский государственный медицинский университет, Томск, Россия

Иммунотропная активность торфяных гуминовых веществ

12:00 – 12:15

Marina Trufanova, Laverov Federal Center for Integrated Arctic Research Russian Academy of Science (FCI Arctic RAS), Arkhangelsk, Russia

On the Contribution of Minor Components to the Biological Activity of Humic Acids

12:15 – 12:30

Anna Zavarzina, Soil Science Department of Lomonosov MSU, Moscow, Russia

Degradation of Soil Humic Acid by Fungal, Bacterial and Lichen-derived Laccases: a Comparative in vitro Study

12:30 – 12:45

Elena Shamrikova, Institute of Biology, of Komi Scientific Centre of the Ural Branch of the Russian Academy of Sciences, Syktyvkar, Russia

Soluble Organic Compounds in Lichens and Mosses

12:45 – 13:00

Anastasiya Maltseva, Institute of Physicochemical and Biological Problems in Soil Sciences, Pushchino, Russia

Influence of Soil Minerals on Structural Features of Newly Formed Organic Matter During Transformation of Plant Residues

13:00 – 14:00

Lunch – Обед

Session 3. Humics-based materials and nature-like technologies for ecosystem health, agriculture, and remediation

Секция 3. Гуминовые продукты и природоподобные технологии для здоровья экосистем, сельского хозяйства и рекультивации

Chairs:

Председатели:

14:00 – 14:30 (Key Note Lecture – Приглашенная лекция)

Kamil Giniyatullin, Kazan State University, Kazan, Russia

The Study in the Model Experiment of the Effect of Biochar Introduction on the Intensity of Substrate-induced Respiration of Soils

14:30 – 14:45

Evgeny Abakumov, Saint-Petersburg State University, Saint-Petersburg, Russia

Humic Substances Development on the Initial Stages of Soil Formation Under the Reclamation practice on the Former mines of the Phosphorites, Leningrad Region

14:45 – 15:00

Olga Bezuglova, Don Zonal Research Institute of Agriculture, Rostov-on-Don, Russia
The Effect of Humic Preparation on the Fertility of Chernozem and Interaction in the System Soil – Microorganisms – Plants

15:00 – 15:15

Igor Ovchinnikov, Kuprevich Institute of Experimental Botany of the National Academy of Sciences of Belarus, Minsk, Belarus
The Effect of Humic Substances on Productivity and Quality of Radish Plants

15:15 – 15:30

Vyacheslav Kan, Kazakh Institute of Soil Science and Agrochemistry named after U.U. Uspanov MA RK, Almaty, Republic of Kazakhstan
Biotechnological Method of Applying "BIOMIN" in Increasing the Fertility of Soils of the Republic of Kazakhstan

15:30 – 16:00

Coffee-Break – Кофейная пауза

16:00 – 16:30 (Key Note Lecture – Приглашенная лекция)

Kamila Kydraliev, Institute of Chemistry and Chemical Technology, National Academy of Sciences, Bishkek Kyrgyz Republic
Hybrid and Functional Humic-Based Materials: from Synthesis to Environmental Application

16:30 – 16:45

Alexander Polyakov, Department of Materials Science of the MSU, Moscow, Russia
There's Plenty of Room... Between Humic Branches. Nanoparticles Synthesis Using Humic Substances

16:45 – 17:00

Irina Grekhova, State Agrarian University of the North Urals, Tyumen', Russia
Application of humic products for bioremediation
Ирина В. Грехова, ГАУ Северного Зауралья, Тюмень, Россия
Применение гуминовых препаратов для биологической рекультивации

17:00 – 17:15

Ilya Novozhilov, JSC "Buyskiy Chemical Plant", Booy. Russia
The Productivity of Potatoes if Using Paste Fitogormonov Fertilizers

17:15 – 17:30

Alexander Popov, Saint Petersburg State University, Saint Petersburg, Russia
*Influence of Humic Substances Solutions Purification by Dialysis on the Mitotic Index of Apical Root Cells of Peas (*Pisum sativum* L.) and Onion (*Allium cepa* L.)*

17:45 – 18:30 **Open Meeting of the CIS-IHSS Chapter**

October 18, 2017, Wednesday – 18 октября, 2017, среда

9:00 – 10:45 – Excursion to the Earth Museum o the Lomonosov MSU (optional)

Session 3. Humics-based materials and nature-like technologies for ecosystem health, agriculture, and remediation

Секция 3. Гуминовые продукты и природоподобные технологии для здоровья экосистем, сельского хозяйства и рекультивации

Lecture hall “the South Chemical Auditorium”, Department of Chemistry Bldg., 2nd Floor
Аудитория ЮХА, Химический факультет МГУ, 2-й этаж

Chairs of the session:

Председатели секции: проф.

10:45 – 11:00

Seraphim Chukov, Saint Petersburg State University, Saint Petersburg, Russia

Progress and problems in understanding interactions of living organisms and humus

Серафим Николаевич Чуков, Санкт-Петербургский государственный университет

Достижения и проблемы в изучении взаимодействия живого и гумуса

11:00 – 11:15

Wolfgang Nowick, Private Institute for applied biotechnology daRostim, Lichtenstein, Germany

Results for the Use of Phytohormone-Humic Acid Compounds (PHCs) in Plant Production in Germany in the Past 12 Years

Вольфганг Новик, Частный институт прикладных биотехнологий daRostim, Лихтенштейн, Германия

11:15 – 11:30

Olga Yakimenko, Department of Soil of the MSU, Moscow, Russia

The Use of Lignohumates to Reduce Rates of Chemical Plant Protection Products

11:30 – 11:45

Elena Lapteva, Institute of Biology of Komi Science Centre of Ural Division RAS, Syktyvkar, Russia

Structure and Properties of Humic Substances in Floodplain Soils of the European North-East

11:45 – 12:00

Vladimir Kholodov, Dokuchaev Soil Science Institute, RAAS, Moscow, Russia

Standard Samples of Humic Acids of Chernozem and Sod-Podzol soil of State Standard Level

12:00 – 13:00

Обед – Lunch

13:00 – 15:00

Poster session – Equipment Demonstration

Hall of the Big Chemical Auditorium, 2nd floor, Department of Chemistry

Стендовая сессия – Демонстрация оборудования

Холл БХА, Химический факультет МГУ

Chairs of the poster session: Prof. **Aron Stubins**, Prof. **Rob Spencer**, Dr. **Nadezhda Belokonova**, Dr. **Elena Lapteva**

13:00 – 13:20

All presenters of Section 1 are at their stands – all presenters give 3 minutes long (“flash”) presentations about their posters ideas

Присутственное время у стендов для участников секции 1 – все докладчики делают 3-х минутный доклад, представляя идею постера.

13:20 – 14:00

All presenters of Section 2 are at their stands - all presenters give 3 minutes long (“flash”) presentations about their posters ideas

Присутственное время у стендов для участников секции 2 - все докладчики делают 3-х минутный доклад, представляя идею постера..

14:00 -15:00

All presenters of Section 3 are at their stands - all presenters give 3 minutes long (“flash”) presentations about their posters ideas

Присутственное время у стендов для участников секции 3 - все докладчики делают 3-х минутный доклад, представляя идею постера..

14:30 – 15:00 – Coffee-Break – Кофейная пауза

MASTER-CLASS ON INSTRUMENTAL ANALYTICS OF HS

МАСТЕР-КЛАСС ПО ИНСТРУМЕНТАЛЬНОМУ АНАЛИЗУ ГУМИНОВЫХ ВЕЩЕСТВ

Big Chemical Auditorium, Department of Chemistry

БХА, Химический факультет МГУ

15:00 – 15:20

Alexander Volikov, Department of Chemistry, Lomonosov MSU

Express Method of Determination of the Humic to Fulvic Acids Ratio (C_{HA}/C_{FA}) using Total Organic Carbon Analyzer as an Alternative to Potassium Dichromate Titration

15:20 – 15:25

Questions on C_{HA}/C_{FA} determination using TOC analyzer

Вопросы по определению C_{HA}/C_{FA} методом ТОС, повторная демонстрация

15:25 – 15:45

Presentation of Analytical Equipment Distributed by the Element Company

Title to be announced

15:45 – 16:05

Evgeny Shirshin, Department of Physics, Lomonosov MSU

Measurements of Optical Properties of Humic Substances using UV-Vis spectrophotometry and fluorimetry

16:05 – 16:10

Questions on measurements of optical properties

Вопросы по определению оптических свойств, повторная демонстрация

16:10 – 16:30

Presentation of the Equipment Distributed by the Donaulab Company

(Title to be announced)

Coffee-Break 16:30 – 16:50

16:50 – 17:10

Alexander Zherebker, Department of Chemistry, Lomonosov MSU

Video demonstration and step-by-step procedure of Fourier Transform Ion Cyclotron Resonance Mass Spectrometry analysis of HS

Александр Жеребкер, Химический факультет МГУ имени М.В. Ломоносова

Демонстрация видео и пошаговой процедуры анализа ГВ методом масс-спектрометрии ионно-циклотронного резонанса с преобразованием Фурье

17:10 – 17:05

Questions on FTICR MS analysis of HS

Вопросы по МСИЦР ПФ анализу ГВ

17:05 – 17:25

Presentation of the Equipment Distributed by the SocTrade Company

(Title to be announced)

17:25 – 17:45

Dmitry Volkov, Department of Chemistry, Lomonosov MSU

Determination of mineral composition of humic substances using ICP AES

17:45 – 17:50

Questions on FTICR MS analysis of HS

Вопросы по МСИЦР ПФ анализу ГВ

18:00 – 19:00

Round-table: “Do humic substances exist and how to measure them?”

Круглый стол: «Существуют ли гуминовые вещества и как их измерить?»

Moderators: Dr. Irina Perminova, Dr. Berthold Stern, Dr. Oleg Gladkov I

Ведущие: Ирина Перминова, Бертольд Штерн и Олег Гладков

Big Chemical Auditorium, Department of Chemistry

Ауд. БХА, 2-й этаж, Химфак МГУ

19:00 – 21:00

Closing of poster session, socializing

Закрытие стендовой сессии, дружественное общение

Department of Chemistry, 2nd Floor, Lobby of the Big Chemical Auditorium

Химический факультет, 2-й этаж, холл БХА

October 19, 2017, Thursday – 19 октября, 2017, четверг

The satellite event of the HIT-2017 conference

Conference of young scientists "Application of innovative humic products" (LIFE FORCE-2017)

10:00 – **Boarding the ship Vatel** at the pear “Expo” (Moscow City) next to the metro “Delovoi Tsentr”

10:00 – 10:30 – **Welcome reception and registration to the event**

10:30 – 11:00 – **Opening ceremony, welcome addresses**

11:00 – 12:30 – **Presentations of young researchers - the winners of the Contest announced by the Life Force Group**

12:30 – 13:00 – **Coffee-break and 15 min stop at the pear “Luzhniki” – possibility to board or disembark the ship**

13:00 – 14:30 – **Presentations of young researchers – winners of the Life Force contest**

14:30 – 15:00 – **Coffee-break**

15:00 – 16:30 – **Stop at the pear “Bolshoi Ust’insky Most” – disembarking the ship for excursion to the park “Zaryad’e”**

16:30 – 16:45 – **Returning and boarding the ship**

16:45 – 18:00 – **General Discussion, Concluding remarks, official closing of the conference HIT-2017 and Life Force-2017, award ceremony of the winners of Life Force -2017 and HIT-2017**

18:00 – 18:30 – **Stop at the pear “Luzhniki” – possibility to disembark the ship**

18:30 – 21:30 – **Continuation of conference dinner, animation program, music.**

21:30 – 22:00 – **Arriving to the final destination – the pear “Expo” at the Delovoi Tsentr metro**

22:00 – 22:30 – **Transfer to the University hotel**

October 20, 2017, Friday – 20 октября 2017, пятница

Department of Chemistry, room 429
Химический факультет МГУ, к. 429

**Meeting of the IUPAC Working Group on the Project 2016-015-2-600
“DATABASE ON MOLECULAR COMPOSITIONS OF NATURAL ORGANIC MATTER
AND HUMIC SUBSTANCES AS MEASURED BY HIGH RESOLUTION MASS
SPECTROMETRY”**

10:00 – 11:00

**Discussion on the project progress
Дискуссия по результатам проекта**

Participants:

Sergey Berezin,
Dmitry Kats
Sunghwan Kim ,
Alexey Kononikhin,
Yury Kostyukevich,
Irina Perminova,
Evgeny Shirshin,
Robert Spencer,
Aron Stubins,
Alexander Zhrebker,

11:00 – 12:00

On-line conference

12:00 – 13:00

Continuation of the discussion

13:00 – 14:00 – Lunch

14:00 – **Continuation of the discussions during sightseeing in Moscow**

October 21, 2017

**Отъезд участников конференции
Departure of the conference participants**

Posters
Стендовые доклады

Section I

Exploring molecular structures and properties of humic substances using advanced analytical and information technologies

Секция I.

Изучение молекулярной структуры и свойств гуминовых веществ с помощью передовых аналитических и информационных технологий

- I-1. Karpukhina E.A., Volkov D.S., Proskurnin M.A., Perminova I.V. FTIR Qualitative and Quantitative Analysis of Humic Substances in Aqueous Solutions and Dry Samples
- I-2. Konstantinov A.I., Zhrebker A.Ya., Kudryavtsev A.V., Perminova I.V., Nikolaev E.N. Quantitative Description and Classification Analysis of NOM Based on FTICR MS Data s
- I-3. Lavrik N.L. Study of the Structure of Macromolecules of the HA "Aldrich" in Aqueous Solutions at Concentrations < 20 mg/l by Absorption and Fluorescence Methods
- I-4. Pankratov D., Anuchina M. Mössbauer Diagnostics of Iron Compounds in Commercial Potassium Humate
- I-5. Volikov A., Perminova I.V. Express Method of Determining the Humic/Fulvic Acids Ratio in Humic Substances by Total Organic Carbon Analyzer

Section II

Ecosystem metabolomics: humic substances in soil and water ecosystems under conditions of changing climate and anthropogenic pollution and their impact on living organisms

Секция II.

Экосистемная метаболомика: гуминовые вещества в почвах и водах в условиях изменения климата и антропогенной нагрузки и их влияние на живые организмы

- II-1. Anuchina M., Makunin A., Pankratov D. Corrosion of Iron-containing Engineering Materials in the Presence of Humic Substances
- II-2. Deryabina Yu.M., Vasilevich R.S., Tikhova V.D. Structural Features of Humic Acids of Different Geographic Zones According to the IR EXPERT System Data
- II-3. Fedoseeva E.V., Pukalchik M.A., Terekhova V.A., Khundzhua D.A., Patsaeva S.V. Sporulation of Filamentous Fungi Under the Action of Humic Substances: Activity of Biogenic Fluorophores and Conidia Production

- II-4. Grigoryeva I., Kholodov V., Farhodov J., Yaroslavceva N. Nitrogen Compounds of Labile Organic Matter of Long-term Experiments on Chernozems
- II-5. Kholodov V., Yaroslavceva N., Farhodov J., Ivanov V., Grigoryeva I. Molecular Composition of Thermolabile and Thermostable Organic Matter in Aggregates of Chernozems
- II-6. Klein O., Kulikova N., Perminova I. Antioxidant Capacity of Soil Humic Substances: TEAC vs. ORAC Approach
- II-7. Lasareva E., Parfenova A., Khaydapova D., Azovtseva N. Influence of the Nature of Organic Matter on the Formation of Soil Structure
- II-8. Lukianova M., Lukianov S. The effect of Humic Substances on Productivity of *Solanum tuberosum* and *Hordeum vulgare* at Mineral Fertilizer Application in Conditions of Microfield Experience
- II-9. Pimenov O. Binding of Phthalic Esters by Humic Acids in Water
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Section III

Humics-based materials and nature-like technologies for ecosystem health, agriculture, and remediation

Секция III

Гуминовые продукты и природоподобные технологии для здоровья экосистем, сельского хозяйства и рекультивации

- III-1. Anuchina M., Pankratov D. Interaction of Metallic Iron and Humic Substances of Various Manufacturers
- III-2. Babaev M., Shagieva A., Danilova E., Yusupova Z., Fatkutdinova M., Kuznecov V. Application of Polyelectrolytes for Production of Ballast-Free Humic Substances
- III-3. Beschetnikov V. Study of the Effect of the Humic Fertilizer Life Force Humate Balance on the Growing of an Ornamental Plant
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- III-6. Cieschi M.T., Volkov D., Polyakov A., Lebedev V., Shlyachtin Oleg., Lucena J.J., Perminova I.V. Importance of Particle Size in Synthesis of Iron Humate Fertilizers
- III-7. Fedoros E., Orlov A., Zherebker A., Izotova E, Perminova I., Gubareva E. Results of Simulation of Biological Activity of the Novel Polyphenolic Ligand of BP-C Family Drugs (*in vitro* and *in silico*).
- III-8. Filippova O., Kulikova N., Perminova I. Mitigating Activity of Humic Substances under Water Deficiency Condition: Role of Phenolic Moieties
- III-9. Filippova O., Ziganshina A., Safronova N., Kholodov V., Yaroslavtseva N., Yudina A., Volikov A., Perminova I., Kulikova N. Improving Soil Properties by Silsesquioxane Humic Systems
- III-10. Gasanov M. Variation of Biological Properties under Influence of Humic Substances and in Conditions of Model Experiments with Sod-podzolic soils Contaminated with Heavy Metals
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- III-13. Gresis V., Tsvetkova Yu., Bashkirova I. Influence of Humic Preparations of LifeForce Group Company Study on Potato's Tuber Productivity in Moscow District
- III-14. Grigoryeva I., Kulikova N., Volikov A., Konstantinov A., Perminova I. Synthesis of Nature-mimicking Silver Nanoparticles in the Presence Humic Substances of Different Origin
- III-15. Kulyabko L.S., Kydraliev K.A. Structure of Nanocomposites Based on Fe₃O₄ and Humic Acids
- III-16. Logvinova L., Zykova M., Lasukova T., Krivoshchekov S., Veretennikova E., Belousov M. Effects of Humic Acids of the Peat on the Coronary Reperfusion and the Contractive Activity of Isolated Heart of Rats
- III-17. Nowick W., Sorge R., Ninnemann H. Изучение при помощи оптических методов пролонгированного действия гуминового препарата Novihum на виноградниках Германии
- III-18. Osipova O., Gladkov O. Diagnostic Features of Biological Activity of Humic Preparations in a Production Environment on the Example of Lignohumate
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- III-25. Ziganshina A., Filippova O., Yudina A., Kholodov V., Volikov A., Perminova I., Kulikova N. Ameliorating Properties of Silsesquioxane Humic Systems: a Model Experiment
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