The 4th Workshop on Water and Soil Clean-up from Mixed Contaminants
European Union 7th Framework Program, "Industry Academia Partnership and Pathways"

TIME	SPEAKER	TITLE
DAY I, AUGUST 9, 2017		
8.00 - 8.45	**REGISTRATION** **1st Floor Lobby** Photo Session from 8.20 Group Photo at 8.30	
Block C2, Orange hall		
8.45 – 8.50	Prof. I. Adesida *(Provost of NU, Kazakhstan)*	Welcoming to NU
8.50 - 8.55	Prof. Z. Bakenov *(Institute of Batteries, NU, National Laboratory Astana, Kazakhstan)*	Opening Remarks
8.55 - 9.00	Dr. M. Vaclavikova *(Institute of Geotechnics SAS, Slovakia)*	About the 4th Workshop of WaSClean Project
9.00 – 10.30	**Plenary Session** (Block C2, Orange hall) **Chairman:** Prof. S.S. Kim**; Co-Chairman:** Prof. H. Munakata	
9.00 – 9.30	Prof. K. Kanamura *(Tokyo Metropolitan University, Japan)*	Preparation of All Solid State Battery by Aerosol Deposition Method
9.30 - 10.00	Prof. J.P. Pereira-Ramos *(CNRS, France)*	Understanding of the nanosize effect on the structure and electrochemistry of V_2O_5 obtained via fluorine chemistry
10.00 - 10.30	Prof. H. Munakata *(Tokyo Metropolitan University, Japan)*	Ionic Liquid/Phosphoric Acid Mixed Electrolyte for Non-humidified Intermediate Temperature Fuel Cells
10.30 – 10.45	**Coffee Break, 1st Floor Lobby**	

Session AM1 on "**Advanced Materials for Energy Storage"** Block C2**,** Orange Hall **Chairman:** Prof. J.P. Pereira-Ramos; **Co-Chairman:** Dr. A. Nurpeissova **10.45 – 12.25**		Session AM2 on **"Alternative Advanced Energy Devices & Applications"** Block C2, Blue Hall **Chairman:** Prof. N.V. Kosova**;** **Co-Chairman:** D.V. Pelegov **10.45 – 12.25**	
10.45 – 11.05 N.-L. Wu *(National Taiwan University, Taiwan)*	Novel Polymeric Artificial Solid Electrolyte Interphases for Enhancing Performance of Li-Ion Battery Cathodes	**10.45 – 11.05** M. Lu *(NU, Kazakhstan)*	Charging unmanned aerial vehicles (UAVs) using high voltage transmission lines
11.05 – 11.25 Y. Jin *(Qingdao Institute of Bioenergy and Bioprocess Technology, Chinese Academy of Sciences, China)*	Facile Synthesis of Hierarchical Mn_2O_3 Nanomaterials as Anode Material For Lithium ion Batteries	**11.05 – 11.25** V. Petrykin *(SuperOx Japan LLC, Japan)*	Current Profile and New Research Directions at SuperOx Japan
11.25 – 11.45 A. Mukanova *(NU, National Laboratory Astana, Kazakhstan)*	Porous Cu current collector for Si thin film anode for Li-ion batteries	**11.25 – 11.45** P. Skrzypacz *(NU, Kazakhstan)*	Bifurcation Analysis of Micro-Electro-Mechanical Pull-in Device
11.45 – 12.05 D.O. Rezepova *(Siberian Branch of the Russian Academy of Sciences, Russia)*	$Na_{1+y}VPO_4F_{1+y}$ ($0 \leq y \leq 0.5$) as Cathode Materials for Hybrid Na^+/Li^+ Batteries	**11.45 – 12.05** Y. Suleimen *(The Institute of Applied Chemistry, L.N. Gumilyov Eurasian National, Kazakhstan)*	New Kind of Affordable Biofuel
12.05 – 12.25 A. Sanbayeva *(NU, Kazakhstan)*	$Li_4Ti_5O_{12}$/Si/c-PAN Composite as Anode Material for Lithium-Ion Batteries	**12.05 – 12.25** A. Batyrkhanov *(NU, Kazakhstan)*	Optimization of the Liquid Scintillator Composition
12.25 – 13.50	**Lunch time**		
13.50 – 15.20	**Plenary Session** (Block C2, Orange Hall) **Chairman:** Prof. K. Kanamura**; Co-Chairman:** Dr. I. Kurmanbayeva		
13.50 – 14.20	Prof. R. Kostecki *(Lawrence Berkeley National Laboratory, USA)*	Probing charge and mass transport phenomena across interfaces and interphases in Li-ion batteries	
14.20 – 14.50	Prof. S.S. Kim *(Chungnam National University, Korea)*	Improvement of rate capability of graphene for Li secondary batteries	

14.50 – 15.20	Prof. N.V. Kosova *(Institute of Solid State Chemistry and Mechanochemistry, Siberian Branch of the Russian Academy of Sciences Russia)*	Possibilities of Mechanochemical Approach to Synthesize Nanostructured Electrode Materials for Modern Li and Na Batteries	
15.20 – 16.50	**Coffee Break** **Poster session** **Block C2, 1st floor lobby**		
Session PM1 on "**Advanced Materials for Energy Storage and Characterization Studies"** Block C2, Orange Hall **Chairman:** Prof. S.T. Myung**;** **Co-Chairman:** Dr. A. Molkenova **16.50 – 18.30**		Session PM2 on "**Green Technology and Environment Protection"** Block C2, Blue Hall **Chairman:** Prof. F.D. Talamona; **Co-Chairman:** Dr. Y. Sarbassov **16.50 – 18.30**	
16.50 – 17.10 D. V. Pelegov *(Institute of Natural Sciences, Ural Federal University, Ekaterinburg, Russia)*	Local Heterogeneity Study of LTO, LFP and Its Composites LTO/C, LFP/C and LFP/C/LTO by micro-Raman, XPS, EDX and big-data analysis	**16.50 – 17.10** A. Kerimray *(NU, Kazakhstan)*	Air pollution in Astana: analysis of recent trends and air quality monitoring system
17.10 – 17.30 A. Molkenova *(NU, National Laboratory Astana, Kazakhstan)*	A new step towards the development of 3D Zn/$LiFePO_4$ aqueous hybrid battery with polymer separator	**17.10 – 17.30** D. Tokmurzin *(NU, Kazakhstan)*	Case study of power generation and CO_2 emissions reduction potential from introduction of Organic Rankine Cycle on Atyrau Oil Refinery Plant Vacuum Distillation Unit
17.30 – 17.50 B. Slautin *(Institute of Natural Sciences, Ural Federal University, Russia)*	Ion transport properties in $LiMn_2O_4$ by Electrochemical strain microscopy	**17.30 – 17.50** F.D. Talamona *(NU, Kazakhstan, University of Newcastle, Australia)*	Green Concrete using Recycled Aggregate Concrete for Sustainable Construction
17.50 – 18.10 A.Yermukham-betova *(NU, Kazakhstan)*	X-ray tomography studies of Lithium Sulphur battery	**17.50 – 18.10** A. Mukhanov *(NU, Kazakhstan)*	Design of a Bus Shelter Based on Green Energy Technologies for Extreme Weather Conditions in Astana
18.10 – 18.30 A. Nurpeissova *(NU, National Laboratory Astana, Kazakhstan)*	Development of 3D Lithium-Sulfur battery	**18.10 – 18.30** D. Mergaliyev *(AES Co., Kazakhstan)*	AES Energy Storage: transforming the grid with innovative solutions

<table>
<tr><th>DATE/TIME</th><th colspan="2">SPEAKER</th><th>TITLE</th></tr>
<tr><td colspan="4">DAY II, AUGUST 10, 2017</td></tr>
<tr><td>9.00 – 10.30</td><td colspan="3">Plenary Session (Block C2, Orange Hall)
Chairman: Prof. R. Kostecki; Co-Chairman: Dr. A. Mentbayeva</td></tr>
<tr><td>9.00 – 9.30</td><td colspan="2">Prof. S.T. Myung
(Sejong University, Korea)</td><td>Distorted Orthorhombic Type Na-Mn-O Cathode Materials</td></tr>
<tr><td>9.30 - 10.00</td><td colspan="2">Prof. Y.K. Sun
(Hanyang University, Korea)</td><td>Progress in High-Capacity Gradient Cathode Materials for Rechargeable Lithium Batteries</td></tr>
<tr><td>10.00 - 10.30</td><td colspan="2">Prof. M. Myronov
(University of Warwick, UK)</td><td>Overcoming limitations of Silicon Carbide heteroepitaxy on Silicon wafers</td></tr>
<tr><td>10.30 – 10.45</td><td colspan="3">Coffee Break, Block C2, 1st floor lobby</td></tr>
<tr><td colspan="2">Session AM3 on “Materials and technology for alternative advanced energy applications”
Block C2, Orange Hall
Chairman: Prof. K. J. Stevenson;
Co-Chairman: Prof. N.-L. Wu
10.45 – 12.25</td><td colspan="2">Session AM2
“The 4th WaSClean Workshop”
Block C2, Blue Hall
Chairman: Dr. M. Vaclavikova;
Co-Chairman: Prof. G. Gallios
09.00 – 12.30</td></tr>
<tr><td rowspan="2">10.45 – 11.05
I.V. Tereshenko
(Lomonosov Moscow State University, Russia)</td><td rowspan="2">The role of “dangling” oxygen atoms for intercalation chemistry of the metal-ion battery polyanion cathodes in the case of Na_2FePO_4F</td><td>09.00 – 9.10
M. Vaclavikova, (Institute of Geotechnics SAS, Slovakia)</td><td>WaSClean - Water and Soil Clean-up from Mixed Contaminants</td></tr>
<tr><td>9.10 – 9.50
D. Kupka
(Institute of Geotechnics SAS, Slovakia)</td><td>Elimination of oxo-chlorine by-products generated during electrolytic treatment</td></tr>
<tr><td rowspan="4">11.05 – 11.25
V. Pavlenko
(Al-Farabi Kazakh National University, Almaty, Kazakhstan)</td><td rowspan="4">Producing of Carbons for Supercapacitor Applications by Chemical Activation of Plant Biomass</td><td>9.50 – 10.05
D. Behunova (Institute of Geotechnics SAS, Slovakia)</td><td>Graphene oxide: material, synthesis and applications in the environment</td></tr>
<tr><td>10.05 – 10.20
P. Sekula Jr.
(Environcentrum s.r.o, Slovakia)</td><td>Elimination of 2-chlorophenol by two types of iron waste particles</td></tr>
<tr><td>10.20 – 10.30
A. Mentbayeva
(NU, National Laboratory Astana, Kazakhstan)</td><td>Application of Bioventing Method in Contaminated Sites Near Kosice, Slovakia</td></tr>
<tr><td>10.30 – 10.45</td><td>Coffee break</td></tr>
<tr><td rowspan="2">11.25 – 11.45
I. Skryabin
(ANU Energy Change Institute, Asutralian National University, Australia)</td><td rowspan="2">Minimisation of Electricity Cost through Optimal Battery Operation</td><td>10.45 – 11.15
G. Gallios
(Aristotle University of Thessaloniki, Greece)</td><td>Degradation of toxic organic substances by combined oxidation and adsorption techniques</td></tr>
<tr><td>11.15 – 11.30
G. Dichello (University of Brighton, UK)</td><td>Controlling Self-Assembling Nanomaterials (SANs) within a Biological Environment</td></tr>
<tr><td>11.45 – 12.05
N. Noyanbayev
(Almaty University of</td><td>Software simulation of the battery energy storage system for production of</td><td>11.30 – 11.45
G. Ingavle
(University of Brighton, UK)</td><td>Composite-nanostructured adsorbent materials for remediation of environmental</td></tr>
</table>

Power Engineering and Telecommunications, Kazakhstan)	efficiency maps		contaminants
		11.45 – 12.00 L. Mikhalovska *(University of Brighton, UK)*	Efficiency of cotton staining dyes adsorption by AC
12.05 – 12.25 A. James *(NU, Kazakhstan)*	Multidimensional Battery Array Monitoring and Charger Circuit Architecture	**12.00 – 12.15** R.-M. Babaa *(NU, Kazakhstan)*	Synthesis of magnetite-carbon based composites and their application in wastewater treatment
		12.15 – 12.30 A. Sanbayeva *(NU, Kazakhstan)*	Treatment of real textile wastewater by adsorption-flocculation
		12.30 – 12.45 K. Ismailov *(NU, Kazakhstan)*	Determination of hydraulic parameters
12.25 – 13.50	**Lunch time**		
13.50 – 15.20	**Plenary Session** (Block C2, Orange Hall) **Chairman:** Prof. Y.K. Sun**; Co-Chairman:** Prof. Y. Zhang		
13.50 – 14.20	Prof. Z. Mansurov *(Institute of Combustion Problems, Al-Farabi KazNU, Kazakhstan)*	Bitumen based carbon fibers for various applications	
14.20 – 14.50	Prof. Y. Zhang *(Hebei University of Technology, China)*	Novel graphene based materials encapsulated sulfur as cathode for lithium/sulfur batteries	
14.50 – 15.20	Prof. K. J. Stevenson *(Skolkovo Institute of Science and Technology, Russia)*	Understanding Ion Solvation Structure, Energetics and Kinetics in Super-concentrated Electrolytes for Energy Storage	
15.20 – 16.35	**Coffee Break, Block C2 1st floor lobby**		
15.30 – 17.20	**Workshops & Sponsors discussion, Block C2, Orange Hall**		
15.30 – 16.30	**Clarivate Analytics "Web of Science: The primary tool for information discovery and navigation" by Ms. Aygun Babazade**		
16.30 – 16.40	**Biohimpribor "Presentation of the company" by Mr. Igor Marchenko**		
16.40 – 16.55	**FEI Company (Thermo Fisher), "Battery and Fuel Cell Materials" by Herman Lemmens, PhD**		
16.55 – 17.10	**OPTEC "Characterization of batteries by high resolution techniques of ZEISS"**		
17.10 – 17.20	**Krisanalyt "Applications of the «PhenomWorld» company desktop scanning electron microscopes (SEM's) for research and control of energy storage systems and nanostructures" by Mr. Khanin Vitaliy**		
Session PM3 on **"Catalysis etc."** Block C2, Orange Hall **Chairman:** Prof. H. Sakurai**;** **Co-Chairman:** Prof. M. Myronov **17.20 – 18.40**		Session PM4 on **"Fuel cells, Solar cells etc."** Block C2, Blue Hall **Chairman:** Prof. D. Adair; **Co-Chairman:** Dr. A. Yedrissov **17.20 – 18.40**	
17.20 – 17.40 H. Sakurai *(Osaka University, Japan)*	Bimetallic Nanoclusters as a Unique Catalyst: A Modern Alchemy	**17.20 – 17.40** D. Adair *(NU, Kazakhstan)*	Quasistatic Modelling of PEM Fuel Cell Humidification System

17.40 – 18.00 M. Okube *(Institute for Materials Research, Japan)*	XAFS Characterization of Local Structure and Understanding Electrocatalytic Behavior of RuO_2 based Materials in O_2 and Cl_2 Evolution Reactions	**17.40 – 18.00** Y. Shabdan *(Al-Farabi Kazakh National University, Kazakhstan)*	Study of Electron Transport Mechanism for Engineered Carbon Nanotube/TiO_2 Nanofibers by Electrospinning
18.00 – 18.20 A.F. Bedilo *(Boreskov Institute of Catalysis SB RAS, Kosygin Russian State University, Russia)*	Oxide Nanoparticles Stabilized by Carbon or Silica Coating	**18.00 – 18.20** S.A. Sergiienko *(National University of Science and Technology MISiS, Russia)*	Structure and transport properties of barium cerate based proton conductors obtained using spark plasma sintering
18.20 – 18.40 R. Otarov *(NU, National Laboratory Astana, Kazakhstan)*	Multi-Objective Heat Integration and Retrofit of Atyrau Oil Refinery	**18.20 – 18.40** B. Akhmetov *(Al-Farabi KazNU, Kazakhstan)*	Towards Development of Solar District Heating System in Kazakhstan: A case study - An analysis of hybrid thermal energy storage performance
18.40 – 18.50	**Closing remarks, Awarding Ceremony (Best Student's Poster),** Block C2, Orange Hall		

DAY III, AUGUST 11, 2017	
Visit to EXPO-2017	**9.00 – 18.00**

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