Final Program

NAMES'16

New Achievements in Materials and Environmental Sciences

Nancy, FRANCE - November 7-9, 2016

Organised by

The University of Lorraine
The National University of Science and Technology "MISIS"
The Ministry of education and research of Perm Krai

Chair

L.O. Filippov

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D. Fornasiero, B. Jamart, B. Kuznetsov, E. Levashov,
T. Lyubimova, S. Nikulin, V. Petrov, D. Roizard, V. Shur, J. Yvon

Conference organised with the GeoRessources Laboratory in collaboration with Institut Jean Lamour, LMOPS and LRGP Laboratories

Supported by Institute of Continuous Media Mechanics of Ural Branch of Russian Academy of Sciences

Local Organising Committee

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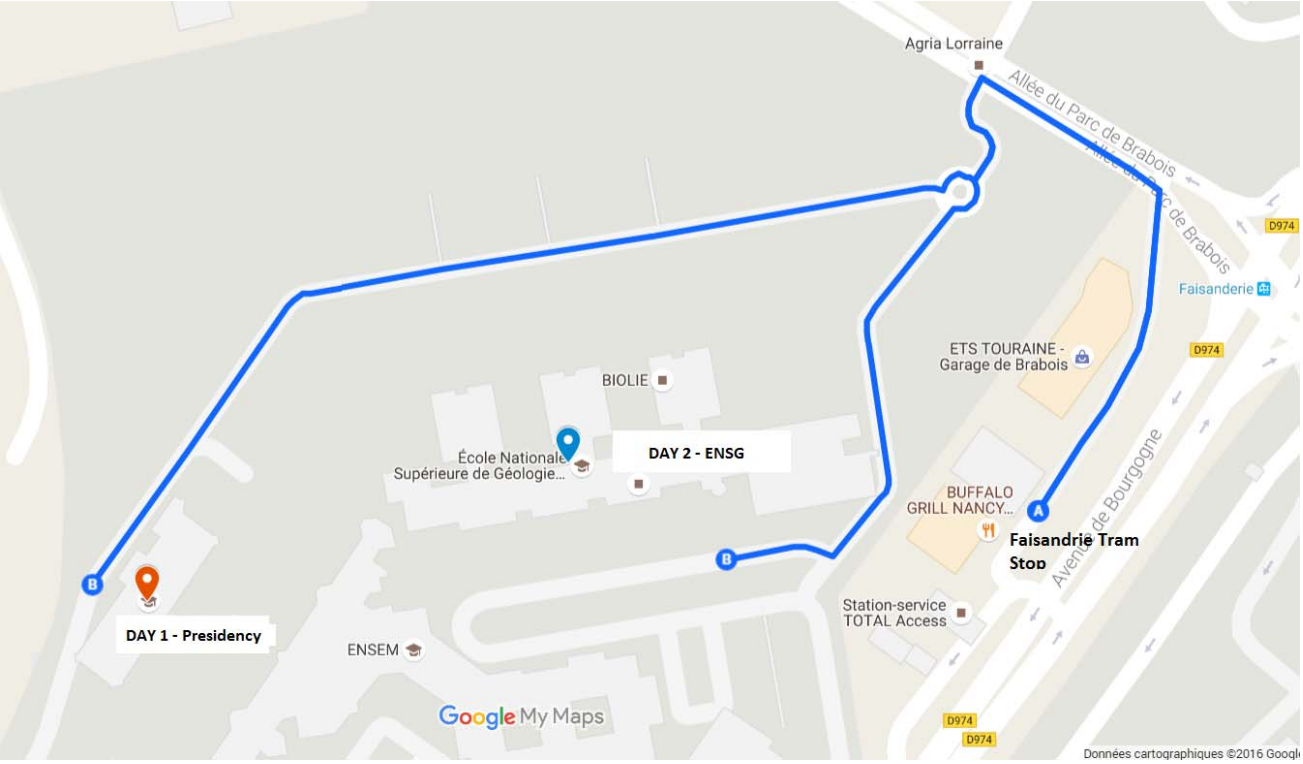

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Welcome to the NAMES'16 conference

French-Russian NAMES seminars traditionally aim at reviewing and discussing current developments in the field of Materials Science by researchers from Russia and Lorraine Region of France. More specifically and as set up by the organizers of the Seminar ("Institut National Polytechnique de Lorraine, INPL" and National University of Sciences and Technology "MISIS"), the Seminar's goals are the following:

- development of scientific and academic contacts by giving a new impulse to bring together fundamental research and technology transfer;
- development and consolidation of scientific, technical and business collaboration between regions of Russia and Lorraine through direct contacts between the universities, institutes and companies involved.

The First Seminar took place on October 27-29, 2004 at the « *Institut National Polytechnique de Lorraine* » (on the premises of the « *Ecole Européenne d'Ingénieurs en Génie des Matériaux* », Nancy, France). The first Seminar demonstrated a high quality and diversity of oral presentations and posters responding to highest international standards. Indeed, the first Seminar gathered 30 oral presentations and 72 posters, presented by:

- 19 participants from 5 Universities and 3 Institutes of the Russian Academy of Science,
- Participants from 11 laboratories of 3 Universities from the Lorraine region,
- Three industrial companies, including European Aeronautic Defense and Space Company - EADS, and ANVAR ("*Agence nationale de valorisation de la recherché*").

From 2005 on, the decision was made for the Seminar to be organised every year. Therefore, the 75th Anniversary of Moscow Institute of Steel and Alloys had been the occasion to set up the Second Seminar in Moscow, Russia, on November 10-12, 2005. The efficiency of scientific partnership between the groups of researchers from both Russia and France and initiated during the First Seminar had been brilliantly demonstrated during this Second Seminar, as well as French-Russian scientific cooperation's high productivity based on the Research-Educational French-Russian International Center. As a consequence of the presentations' high standards and the Seminar's widest organisation, the Second Seminar doubtlessly met the main standards of an international conference.
Reviews of the state-of-the-art developments in Materials Science were given by leading scientists from Moscow and from the Lorraine region. The three days long seminar was structured around four main topics:

- Functional Materials;
- Coatings, Films and Surface Engineering,
- Nanomaterials and Nanotechnologies,
- Environment;

and three Round Tables:

- defining practical means of carrying out Franco-Russian collaborations in technology transfer and innovation;
- Materials Science;
- ARCUS: Lorraine-Russian collaboration in materials science and environment.

The event totalised 32 oral and 25 poster reports spread between the four abovementioned topics and set out by 110 participants.

NAMES 2007, the 3rd France-Russia Seminar on New Achievements in Materials and Environmental Sciences took place in Metz (France) on November 7-9, 2007. The conference

emphasized fundamentals and development of the five main themes linked to the Lorraine –Russia ARCUS project with possible extension to other topics.

The five mains subjects included in Arcus Project are the following:

- Bulk-Surface-Interface material sciences,
- Nanomaterials and nanotechnologies,
- Environment and Natural resources,
- Plasma physics —ITER Project, and
- Vibrational dynamics.

The 3rd conference totalised 46 oral and 52 poster presentations during 3 days with 154 participants.

The First, the Second and Third NAMES Seminars were financially supported by the following organisations:

- Ambassade de France à Moscou
- Communauté Urbaine du Grand Nancy
- Région Lorraine
- Conseil Général de Meurthe et Moselle
- Institut National Polytechnique de Lorraine
- Université de Metz
- Université Henry Poincaré
- CNRS
- ANVAR
- Federal Agency on Science and Innovations of the Ministry of Education and Science of Russian Federation;
- Moscow Committee on Science and Technologies;
- National university of sciences and technology "MISIS".

The 4th NAMES Conference was supported by the Ministry of Foreign Affairs of France and the Lorraine Region Council and took place in Nancy on October 26-29, 2010.

The Conference totalised 49 oral and 22 poster presentations during 4 days with more than 100 participants.

The papers published in the proceedings of 3rd NAMES conference were indexed in Scopus and the peer reviewed papers of the 4th conference were indexed both in Web of Sciences and Scopus.

The Seminars set out new perspectives for further research and stimulated the opportunities for enhanced cooperation between scientists from Lorraine and Russia.
The participants of the Seminars reviewed the remarkable worldwide progress with numerous breakthroughs in areas of basic research and industrial applications, particularly in the fields of nanomaterials and nanotechnologies, surface engineering, biomaterials and multifunctional coatings, functionally graded materials, new materials for microelectronics and optics, nanostructured thin films and nanodispersion strengthening coatings, combustion synthesis, new micro- and nanosystems and device, natural resources environmental sciences, clean technology, and recently, natural fibrous materials etc.

The Seminar participants and organisers most intimate opinion is that new fundamental knowledge, new materials, and industrial production methods, generated as a result of international cooperation between both countries, would be of outstanding interest for the partners.

Lev Filippov,
Coordinator of NAMES conferences

DAILY SCHEDULE

DAY 1 – Monday 7, November 2016 – MORNING SESSION *Brabois campus, presidency building, Gallé room*		
8.00 – 9.00	**WELCOME**	
9.00 – 09.15	**Opening**	**L.O. FILIPPOV**, Coordinator NAMES Conferences **B. Jamart**, EEIGM Director **K.Tombre**, Vice-president of University of Lorraine
Session 1 – Nanomaterials (I) **Session Chair: D. Roizard**		
9.15 – 9.45	**Keynote:** Investigation of domain walls in PPLN by confocal raman microscopy and PCA analysis	V. Ya. Shur[1], **P. Zelenovskiy**[1], and P. Bourson[2] *[1]Institute of Natural Sciences, Ural Federal University* *[2]Laboratoire Matériaux Optiques, Photonique et Systèmes (LMOPS), Université de Lorraine*
9.45 – 10.10	Application of Z-scan technique for study of nonlinear light scattering in photorefractive LiNbO3 crystals	**S.M. Kostritskii**[1], M. Aillerie[2], E. Kokanyan[3] and O.G. Sevostyanov[2] *[1]RPC Optolink* *[2]Laboratoire Matériaux Optiques, Photonique et Systèmes (LMOPS), Université de Lorraine and CentraleSupelec* *[3]Institute for Physical Research, National Academy of Sciences of Armenia* *[4]Phys. Dept., Kemerovo State University*
10.10 – 10.35	Effect of Zr doping on the structure of Lithium Niobate crystals: Site spectroscopy and Chemometrics	**N. Kokanyan**[1,2], D. Chapron[1,2], E. Kokanyan[3,4] and M. Fontana[1,2] *[1]CentraleSupelec* *[2]Laboratoire Matériaux Optiques, Photonique et Systèmes (LMOPS), Université de Lorraine* *[3]Institute for Physical Research, National Academy of Sciences of Armenia* *[4]Armenian State Pedagogical University After Kh. Abovyan*
10.35 – 11.00	**COFFEE BREAK**	
Session 2 – Nanomaterials (II) **Session Chair: P. Bourson**		
11.00 – 11.25	Recent advances in Electro-optic and their link with the Photorefractive properties of doped congruent lithium-niobate crystals	**M. Aillerie**[1,2], E. Kokanyan[3,4], A. Movsesyan[3,4], A. Danielyan[1,2,3], N. Kokanyan[1,2], M. Abarkan[1,2,5], F. Abdi[6] and S. Kostritskii[7] *[1]CentraleSupelec* *[2]Laboratoire Matériaux Optiques, Photonique et Systèmes (LMOPS), Université de Lorraine* *[3]Armenian State Pedagogical University After Kh. Abovyan* *[4]Institute for Physical Research, National Academy of Sciences of Armenia* *[5]Université Sidi Mohammed Ben Abdallah de Fès, LIMAO* *[6]Université Sidi Mohammed Ben Abdellah de Fès, LSC* *[7]RPC Optolink*
11.25 – 11.50	Highly chiral-selective growth of SWCNTs	**S. Yu. Tsareva**[1,2], X. Devaux[1], E. McRae[1], L. Aranda[1], Y. Fort[2], B. Gregoire[3], C. Carteret[3], M. Dossot[3], B. Humbert[4] and J.Y. Mevellec[4] *[1]Institut Jean Lamour-UMR Université de Lorraine-CNRS 7198* *[2]SRSMC, Université de Lorraine-CNRS UMR 7565* *[3]LCPME, Université de Lorraine-CNRS UMR7564* *[4]IMN, Université de Nantes-CNRS- UMR 6502*
11.50 – 12.15	Localisation and identification of a single molecule grafted on a single-wall carbon nanotube	**X. Devaux**[1], N. Allali[2,3], V. Mamane[2] and M. Dossot[3] *[1]Institut Jean Lamour-UMR Université de Lorraine-CNRS 7198* *[2]SRSMC, Université de Lorraine-CNRS UMR 7565* *[3]LCPME, Université de Lorraine-CNRS UMR7564*
12.15 – 14.00	**LUNCH BREAK**	

DAY 1 – Monday, 7 November 2016 – AFTERNOON SESSION *Brabois campus, presidency building, Gallé room*		
Session 3 – Natural resources & Geomaterials (I) **Session Chair: A. Chagnes**		
14.00 – 14.25	The role of local probe-type and distributed sonication on the potash ore flotation from Palasher district of Verkhnekamskoe deposit (Ural, Russia)	**L.O. Filippov[1]**, I.V. Filippova[1], T. Lyubimova[2], K. Rybkin[2] *[1]Université de Lorraine, GeoRessources laboratory, UMR 7359, CNRS, CREGU* *[2]Perm State University, Perm, Russia.*
14.25 – 14.50	Surfactant effect on interaction of rising bubble and particle in a liquid subjected to vibrations	D. Lyubimov[1], L. Klimenko[2], **T. Lyubimova**[1,2] and L.O. Filippov[3,4] *[1]Perm State University* *[2]Institute of Continuous Media Mechanics UB RAS* *[3]Université de Lorraine, GeoRessources laboratory, UMR 7359, CNRS, CREGU* *[4]National University of Science and technology "MISIS"*
14.50 – 15.15	High-performance reagent modes for flotation recovery of platiniferous copper and nickel sulfides from hard-to beneficiate ores	**T. N. Matveeva** and V. A. Chanturiya *Institute of comprehensive exploitation of mineral resources of RAS*
15.15 – 15.40	**COFFEE BREAK**	
Session 4 – Physical-chemistry of materials **Session Chair: T. Matveeva**		
15.40 – 16.05	Challenges in lithium-ion batteries recycling	**A. Chagnes** *Université de Lorraine, GeoRessources laboratory, UMR 7359, CNRS, CREGU, ENSG*
16.05 – 16.30	Investigation of calcite and fluorapatite reactivity in the presence of phosphoric acid during the direct flotation of phosphate ore.	**O.B. Kaba**, L O Filippov, I V Filippova *Université de Lorraine, GeoRessources laboratory, UMR 7359, CNRS-CREGU, ENSG*
16.30 – 16.50	Improvement of calcium mineral separation contrast using anionic reagents : zeta potential properties	**Z. Lafhaj**, I. V. Filippova, L.O. Filippov *Université de Lorraine, GeoRessources laboratory, UMR 7359, CNRS, CREGU*
16.50 –18.00	**Poster session**	
18.00 –	**HAPPY HOUR**	

DAY 2 – Tuesday, 8 November 2016 – MORNING SESSION *Brabois campus, National Geology School (ENSG), Board room*		
Session 5 – Modelling **Session Chair: A. Celzard**		
9.00 – 9.30	**Keynote:** Innovations in the flotation of fine and coarse particles	**D. Fornasiero**[1,2] and L.O. Filippov[2,3] *[1]Future Industries Institute, University of South Australia* *[2]Université de Lorraine, GeoRessources laboratory, UMR 7359, CNRS, CREGU* *[3]National University of Science and technology "MISIS"*
9.30 – 9.55	Improving efficiency in flotation ore recovery using ultra-sonic cavitation bubbles. Part I	**L.O. Filippov**[1,2], J.J. Royer[1] and I.V.Filippova[1,2] *[1]Université de Lorraine, GeoRessources laboratory, UMR 7359, CNRS, CREGU, ENSG* *[2]National University of Science and technology "MISIS"*
9.55 – 10.20	The formation of two-dimensional periodic structures in an ensemble of solid particles in a liquid under the translational vibration of the linear polarization.	**T. Lyubimova**[1,2], T. Maslova[1,2] and O. Fatallov[2] *[1]Institute of Continuous Media Mechanics UB RAS* *[2]Perm State University*
10.20 – 10.45	Development of scientific basis of intensive flotation technology for an efficient exploitation of K-Mg potash ore of Verkhnekamskoe deposit.	D. Lyubimov[1], **T. Lyubimova**[1,2], K.A. Rybkin[1], L.O. Filippov[3], I.V. Filippova[3], N. Maximovich[1], K.N. Ivanova[1] *[1]Perm State University* *[2]Institute of Continuous Media Mechanics UB RAS* *[3]Université de Lorraine, GeoRessources laboratory, UMR 7359, CNRS, CREGU, ENS*
10.45 – 11.10	**COFFEE BREAK**	
Session 6 – Materials for evironment (I) **Session Chair: V. Petrov**		
11.10 – 11.35	Simple device, experimental approach and data analysis for evaluating hydration kinetic and water retention of soils	M. Darnat[1], N. Kanari[2], **J. Yvon[2]** and J-P. Jacquinet[1] *[1]Société TRACER* *[2]Université de Lorraine, GeoRessources laboratory, UMR 7359, CNRS, CREGU*
11.35 – 12.00	Dense PVA-fullerenol nanocomposites membranes for pervaporation dehydration	**A. Penkova**[1], M. Dmitrenko[1] and D. Roizard[2] *[1]St. Petersburg State University* *[2]Laboratoire Réactions et Génie des Procédés (LRGP), CNRS, Université de Lorraine, ENSIC*
12.00 – 14.00	**LUNCH BREAK**	

DAY 2 – Tuesday, 8 November 2016 – AFTERNOON SESSION *Brabois campus, National Geology School (ENSG), Board room*		
Session 7 – Natural resources & Geomaterials (II) **Session Chair: T. Lyubimova**		
14.00 – 14.25	Purification of low grade diatomite via reverse flotation	**V.V. Severov**[1,2], I.V. Filippova[1] and L.O. Filippov[1] *[1]Université de Lorraine, GeoRessources laboratory, UMR 7359, CNRS, CREGU, ENSG* *[2]National University of Science and technology "MISIS"*
14.25 – 14.50	Aggregation of nickel laterite ore particles using polyacrylamide flocculants	**S. Farrokhpay** and L.O. Filippov *Université de Lorraine, GeoRessources laboratory, UMR 7359, CNRS, CREGU, ENSG*
14.50 – 15.15	GIS-based separation of active lineaments within the Krasnokamensk Area, Transbaikalia, Russia	**V. Petrov**[1], M. Lespinasse[2], S.A. Ustinov[1] and C. Cialec[2] *[1]Institute of Geology of Ore Deposits, Petrography, Mineralogy and Geochemistry (IGEM), Russia Academy of Sciences* *[2]Université de Lorraine, GeoRessources laboratory, UMR 7359, CNRS, CREGU*
15.15 – 15.40	Intensifying of reverse cationic flotation of hematite ores due to optimization of process and hydrodynamic parameters of flotation cell	**O. Poperechnikova**[1], L.O. Filippov[2,3], E. Shumskaya[1] and I.V. Filippova[2,3] *[1]IVS, Zheleznovodskaya str.11A, Saint-Petersburg, 199155, Russia* *[2]Université de Lorraine, GeoRessources laboratory, UMR 7359, CNRS, CREGU, ENSG* *[3]National University of Science and technology "MISIS"*
15.40 – 16.05	**COFFEE BREAK**	
Session 8 – Materials for evironment (II) **Session Chair: D. Fornasiero**		
16.05 – 16.30	Physical properties of model, reticulated and cellular vitreous carbon foams	**M. Letellier**[1], J. Macutkevic[2], D. Bychanok[3], P. Kuzhir[3], C. Delgado-Sanchez[1], H. Naguib[4], S. Ghaffari Mosanenzadeh[4],V. Fierro[1] and A. Celzard[1] *[1]Institut Jean Lamour-UMR Université de Lorraine-CNRS 7198, ENSTIB* *[2]Department of Radiophysics, Vilnius University* *[3]Research Institute for Nuclear Problems BSU* *[4]Department of Materials Science and Engineering, University of Toronto*
16.30 – 16.55	Preparation of nano-emulsion fuel	**A. Otsuki**[1], K. Sofuku[2], G. Dodbiba[2] and T. Fujita[2] and S. Shagalina[1] *[1]Université de Lorraine, GeoRessources laboratory, UMR 7359, CNRS, CREGU* *[2]The University of Tokyo*
16.55 – 17.20	Synthesis, mechanical and physical properties of elastic materials based on flavonoid tannin	**L.Grishechko**[1,2], G. Amaral-Labat[2,3], V. Fierro[2], G.F.B. Lenze Silva[3], B. Kuznetsov[1], A. Pizzi[4] and A. Celzard[2] *[1]Institute of Chemistry and Chemical Technology, SB RAS, 50/24, Akademgorodok St, Krasnoyarsk* *[2]Institut Jean Lamour-UMR Université de Lorraine-CNRS 7198, ENSTIB* *[3]University of São Paulo, Department of Metallurgical and Materials Engineering PMT-USP* *[4]LERMAB – EA Université de Lorraine 4370, ENSTIB*
17.20 – 18.00	**POSTER SESSION**	
EVENING	**GALA DINNER**	

DAY 3 – Wednesday, 9 November 2016 – MORNING	
VISITS	
9.00 – 12.00	Visit of the STEVAL pilot plant and platforms of the GeoRessources laboratory

LIST OF POSTERS

POSTER PAPERS

Poster Board Number	Name	Institution	Title of presentation
		Materials for environment	
1	**D. Bychanok**[1], S. Li[2], A. Sanchez-Sanchez[3], G. Gorokhov[1], P. Kuzhir[1], F. Ogrin[4], A. Pasc[2], T. Ballweg[5], K-S Mandel[5,6], A. Szczurek[3], V. Fierro[3] and A. Celzard[3]	[1]Research Institute for Nuclear Problems BSU [2]NANO Group, SRSMC-UMR Université de Lorraine-CNRS 7565 [3]Institut Jean Lamour-UMR Université de Lorraine-CNRS 7198, ENSTIB [4]University of Exeter [3]Fraunhofer Institute for Silicate Research ISC [4]Julius-Maximilians-University Wuerzburg, Chair of Chemical Technology of Materials Synthesis	Bioinspired carbon capsules for microwave applications
2	**A. Sánchez-Sánchez**[1], V. Fierro[1], M.T. Izquierdo[2] and A. Celzard[1]	[1]Institut Jean Lamour-UMR Université de Lorraine-CNRS 7198, ENSTIB [2]Instituto de Carboquímica, ICB-CSIC, Miguel Luesma Castán	Nitrogen-doped, hierarchical, ordered mesoporous carbons for high-performance supercapacitors
3	**A. Sánchez-Sánchez**[1], V. Fierro[1], M.T. Izquierdo[2] and A. Celzard[1]	[1]Institut Jean Lamour-UMR Université de Lorraine-CNRS 7198, ENSTIB [2]Instituto de Carboquímica, ICB-CSIC, Miguel Luesma Castán	Ordered mesoporous carbons derived from plant polyphenols for electrochemical storage
4	**D. Bychanok**[1], A. Paddubskaya[1], P. Kuzhir[1], A. Ortona[2], E. Rezaei[2], V. Fierro[3] and A. Celzard[3]	[1]Research Institute for Nuclear Problems BSU [2]The iCIMSI Research Institute – University of Applied Sciences (SUPSI), Department of Technology and Innovation [3]Institut Jean Lamour-UMR Université de Lorraine-CNRS 7198, ENSTIB	Tunable photonic crystals for electromagnetic applications based on 3d carbon periodic lattices
5	M. Dmitrenko[1], **A. Penkova**[1] and D. Roizard[2]	[1]St. Petersburg State University [2]Laboratoire Réactions et Génie des Procédés (LRGP), CNRS, Université de Lorraine, ENSIC	Physico-chemical and transport properties of membranes based on polyvinyl chloride modified by fullerene and fullerenol
6	**N. Maksimovich** and O. Meshcheriakova	Perm State University	The technology of the cleaning of oil-contaminated groundwater in karst areas

POSTER PAPERS

Poster Board Number	Name	Institution	Title of presentation
Natural resources & Geomaterials			
7	**K.A. Rybkin**[1], Yu.K. Bratukhin[1], T.P. Lyubimova[1,2], O. Fatallov[1] and L.O. Filippov[2]	[1]Perm State University [2]Université de Lorraine, GeoRessources laboratory, UMR 7359, CNRS, CREGU, ENSG	Experimental study of ultrasound streamlines on the behaviour of the solid particles and bubbles in the Hele Shaw cell
8	**E. Khayrulina** and N. Maksimovich	Perm State University	Environmental effect of rock-brine interaction under potash deposit development.
Modelling			
9	**T. Lyubimova**[1], A. Lepikhin[2], Ya. Parshakova[2] and A. Tiunov[2]	[1]Institute of Continuous Media Mechanics of the Ural Branch of the Russian Academy of Science [2]Mining Institute of the Ural Branch of the Russian Academy of Sciences	Investigation of river pollution due to removal of contaminants from the floodplain water bodies during high magnitude floods
10	**T. Lyubimova**[1,3], A. Lepikhin[2], Yu. Lyakhin[2] Ya. Parshakova[2] and A. Tiunov[2]	[1]Institute of Continuous Media Mechanics of the Ural Branch of the Russian Academy of Science [2]Mining Institute of the Ural Branch of the Russian Academy of Sciences [3]Perm state University	Thermal pollution of large water bodies from thermal and nuclear power plants
11	**J.J. Royer**[1], N. Monnin[1], N. Pailot-Bonnetat[1], L.O. Filippov[1,2], I.V. Filippova[1,2] and T. Lyubimova[3]	[1]Université de Lorraine, GeoRessources laboratory, UMR 7359, CNRS, CREGU, ENSG [2]National University of Science and technology “MISIS” [3]Perm State University	Thermodynamics of ultra-sonic cavitation bubbles in flotation ore processes. Part II
12	**J.J. Royer** and L.O. Filippov	Université de Lorraine, GeoRessources laboratory, UMR 7359, CNRS, CREGU, ENSG	Identifying potential disaster zones around the Verkhnekam-skoye potash deposit (Russia) using advanced information technology (IT)

POSTER PAPERS

Poster Board Number	Name	Institution	Title of presentation
		Functional materials	
13	A. Danielyan[1,2,3], L. Vittadello[4], **M. Aillerie**[2,3], E. Kokanyan[1,5], N. Kokanyan[2,3], M. Bazzan[4], S.M. Kostritskii[6]	[1]Institute for Physical Research, National Academy of Sciences of Armenia [2]Laboratoire Matériaux Optiques, Photonique et Systèmes (LMOPS), Université de Lorraine [3]CentraleSupelec [4]Physics Department and CNISM, University of Padova [5]Armenian State Pedagogical University After Kh. Abovyan [6]RPC Optolink	Physical properties of iron doped $LiNbO_3$ from sub-congruent to quasistoichiometric crystals
14	**M. Aillerie**[1,2], E. Kokanyan[3,4], G. Demirkhanyan[3], H. Demirkhanyan[3], M. Stoffel[5], H. Rinnert[5]	[1]Laboratoire Matériaux Optiques, Photonique et Systèmes (LMOPS), Université de Lorraine [2]CentraleSupelec [3]Armenian State Pedagogical University After Kh. Abovyan [4]Institute for Physical Research, National Academy of Sciences of Armenia [5]Institut Jean Lamour-UMR Université de Lorraine-CNRS 7198	$LiNbO_3$ crystals co-doped with Er^{3+} and Yb^{3+} ions for green up-converted luminescence
15	**V. Khatkevich**, S. Nikulin, S. Rogachev and A. Sergeychev	The National University of Science and Technology “MISIS”	High-temperature internal nitriding of heavy-section steel products
16	**S Nikulin**, T. Nechaykina, A. Rozhnov, S. Rogachev, V. Khatkevich	The National University of Science and Technology “MISIS”	Hybrid material “steel / vanadium alloy / steel” obtained by different deformation-thermal treatment
		Recycling	
17	**N. Kanari**, F. Diot, E. Allain and J. Yvon	Université de Lorraine, GeoRessources laboratory, UMR 7359, CNRS, CREGU	Processing of magnesium bearing materials by dry chlorination - An overview of kinetic aspects

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