The 8th NIMS-UR1-CNRS-SG Workshop

Materials and Sustainable Development: Issues and Challenges of the 21st Century

Date: Nov. 6-7th, 2019

Venue: Auditorium, Collaborative Research building,

Namiki site, NIMS, Tsukuba, Japan

Organized by

National Institute for Materials Sciences

CNRS

Saint-Gobain

The University of Rennes 1

Organizing committee:

Dr. David Berthebaud (CNRS-LINK)
Dr. Stéphane Cordier (CNRS-ISCR)
Dr. Fabien Grasset (CNRS-LINK)
M. David Lechevalier (SG-LINK)
Prof. Naoki Ohashi (NIMS-LINK)
Dr. Noriko Saito (NIMS)
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Materials and Sustainable Development:
Issues and Challenges of the 21st Century

PROGRAMME

November 6th - 7th, 2019
Auditorium, Collaborative Research building, Namiki site

Wednesday, 6 NOVEMBER 2019		
Time	Speaker	Title
	Chair: Noriko SAITO and Fabien GRASSET	
10:00 - 10:15	**Welcome by Naoki OHASHI**	
	Chairs: Fabien GRASSET and Isao OHKUBO	
10:15 -11:05	**Invited Talk**	
	Alexander GOVOROV	PLASMONIC GLASSES AND FILMS BASED ON ALTERNATIVE
	(Ohio Univ.)	INEXPENSIVE MATERIALS FOR BLOCKING INFRARED RADIATION
11:05-11:30	**Jean-Christophe LE BRETON**	SILICON BAND ENGINEERING WITH 2D MATERIALS
	(CNRS Rennes)	
11:30-11:55	**Keitaro SODEYAMA**	ACCELERATION OF THE MATERIALS RESEARCH WITH DATA-DRIVEN
	(NIMS)	TECHNIQUES
11:55-13:45	**Lunch buffet and Poster session**	
	Chairs: David LECHEVALIER and Stéphane CORDIER	
13:50-14:15	**Huachun LI**	SAINT-GOBAIN CERAMIC ACTIVITIES AT SGR SHANGHAI
	(SGRS)	
14:15-14:40	**Tohru SUZUKI**	ORIENTATION CONTROL OF CERAMICS BY MAGNETIC FIELD ASSISTED
	(NIMS)	COLLOIDAL PROCESSING
14:40-15:05	**Hideyuki MURAKAMI**	DEVELOPMENT OF HIGH ENTROPY ALLOYS FOR HIGH TEMPERATURE
	(NIMS)	APPLICATIONS
15:05-15:30	**Ulrike LÜDERS**	OXIDE THIN FILMS AT CRISMAT: FROM FUNDAMENTALS TO
	(CNRS-Caen)	APPLICATION
15:30-15:55	**Coffee Break**	
	Chairs: Jonathan HILL and Benoit COASNE	
15:55-16:20	**Stéphane CORDIER**	OPTIMIZING THE SELF-ASSEMBLING OF CLUSTERS WITHIN
	(CNRS Rennes)	MATERIALS AND ONTO SURFACES
16:20-16:45	**Adèle RENAUD**	TRANSITION METAL CLUSTER-BASED PHOTOELECTRODES FOR
	(UR1)	ENERGY APPLICATION

	Franck TESSIER	AN INNOVATIVE ROUTE TO NANOMETRIC TRANSITION METAL
16:45-17:10	**(CNRS Rennes)**	NITRIDES FOR HETEROGENEOUS CATALYSIS
	Héléna KAPER	INFLUENCE OF THE CERAMIC SUPPORT ON CATALYTIC REACTION
17:10-17:35	**(CNRS Cavaillon)**	
18:00-18h15	**Bus to EPOCAL**	
18:30-20:30	**Welcome Dinner at INCAROSE**	

Thursday, 7 NOVEMBER 2019

Time	Speaker	Title
	Chairs: Zhou MENG and Takao MORI	
10:00-10:50	**Invited Talk**	
	Benoit COASNE	ADSORPTION AND TRANSPORT OF FLUIDS IN POROUS MATERIALS
	(CNRS Grenoble)	
10:50-11:15	**Masayoshi HIGUCHI**	ELECTROCHROMIC METALLO-SUPRAMOLECULAR POLYMERS AND
	(NIMS)	THE DEVICE FABRICATION
11:15-11:40	**Masanobu NAITO**	FACILE AND RATIONAL MODULATION OF UBIQUITOUS PLANT
	(NIMS)	POLYPHENOLS: NOVEL MULTIFUNCTIONAL COATING PRECURSORS
		FROM NATURE
11:40-12:05	**Jonathan HILL**	ACENE AND ARENE CHROMOPHORES AT SURFACES AND IN SOLUTION
	(NIMS)	
12:05-13:30	**Lunch buffet and Poster session**	
	Chairs: Hideyuki MURAKAMI and Alexander GOVOROV	
13:40-14:05	**Yoshitaka MATSUSHITA**	THERMAL BEHAVIOUR OF LITHIUM PEROXIDE
	(NIMS)	
14:05-14:30	**Yohann BREARD**	DIFFERENT MATERIALS SHOWING MAGNETOCALORIC EFFECT:
	(Caen Univ.)	FUNDAMENTAL ASPECTS AND APPLICATIONS
14:30-14:55	**Alexi BELIK**	HIGH-PRESSURE EXPLORATION OF A-SITE COLUMNAR-ORDERED
	(NIMS)	QUADRUPLE PEROVSKITES
14:55-15:20	**Coffee Break**	
	Chairs: David BERTHEBAUD and Tetsuo UCHIKOSHI	
15:20-15:45	**Takao MORI**	DEVELOPMENT OF THERMOELECTRIC MATERIALS & MODULES TO
	(NIMS)	POWER IOT SENSORS AND DEVICES
15:45-16:10	**Mathieu PASTUREL**	MAGNESIOTHERMIC SYNTHESIS OF THERMOELECTRIC
	(CNRS-Rennes)	INTERMETALLICS: MECHANISMS, MULTISCALE CHARACTERIZATION
		AND PROPERTIES
16:10-16:35	**Franck GASCOIN**	SOLID STATE CHEMISTRY OF SOME CHALCOGENIDES: FROM
	(Caen Univ.)	CRYSTALLOGRAPHY TO TRANSPORT PROPERTIES
16:35-17:00	**Isao OHKUBO**	DFT CALCULATION AND MACHINE LEARNING APPROACHES FOR
	(NIMS)	DEVELOPING LAYERED COMPLEX NITRIDES

	Chair: Fabien GRASSET and Noriko SAITO
17:00-17:30	**Closing Session and Group Photo**
	Naoki OHASHI
	David BERTHEBAUD
	Jacques MALEVAL, CNRS Tokyo Office
	Jean-Christophe AUFFRAY, French Embassy

18:00-18h15	**Bus to TENRYIU**
18:30-20:30	**Conference Dinner at TENRYU**

List of Poster

P.1 SYNTHESIS AND CHARACTERIZATION OF p-n CONTROLLABLE $Y_XAl_YB_{14}$ PREPARED BY REACTIVE SPARK PLASMA SINTERING, H. W. Son

P.2 Te DOPING EFFECT IN RARE EARTH-FREE $CoSb_3$-SKUTTERUDITE THIN FILMS, C. Bourgès

P.3 THERMOELECTRIC AND MECHANICAL BEHAVIOR OF BORON-DOPED HIGHER MANGANESE SILICIDES, Q. Guo

P.4 CHALCOGENIDE-BASED MATERIALS FOR MID-TEMPERATURE RANGE THERMOELECTRICS, B. Srinivasan

P.5 MAGNESIOREDUCTION SYNTHESIS AND TEXTURATION OF $MnSi_{1.74}$ THERMOELECTRICS, S. Le Tonquesse

P.6 DESIGN OF NEW REFRACTORY HIGH ENTROPY ALLOYS FOR GLASS PROCESSING COMPONENTS, L. E. Moreau

P.7 FIB-SEM MICROSTRUCTURAL CHARACTERIZATION OF SINTERED REFRACTORIES, F. Beaugnon

P.8 DEVELOPMENT OF KNN-BASED LEAD-FREE PIEZOELECTRIC SINGLE CRYSTALS, L. Vaschalde

P.9 FUNCTIONALIZATION OF SIC SUBSTRATE BY OXIDE MATERIAL COATING, V. Proust

P.10 THIN-FILM CHALCOGENIDES FOR PHASE-CHANGE APPLICATIONS, C. L. Hassam

P.11 MECHANICAL BEHAVIOR OF MULTISCALE TEXTURED ALUMINA OBTAINED BY DIRECT INK WRITING, T. Lacondemine

P.12 UNDERSTANDING THE EXFOLIATED MoS_2/GO MEMBRANE STABILITY DURING WATER FILTRATION, M. Zhang

P.13 ORIGINAL SYNTHESIS OF MOLYBDENUM NITRIDES STARTING FROM TRANSITION METAL CLUSTER COMPOUNDS, K. Guy

P.14 SOFT PATHWAY LEADING TO MOLYBDENUM CARBIDES STARTING FROM CLUSTER COMPOUNDS, K. Guy

P.15 OCTAHEDRAL MOLYBDENUM CLUSTER-FUNCTIONLIZED LAYER DOUBLE HYDROXIDE FOR CATALYST APPLICATION, T. K. N. Nguyen

P.16 SYNTHESIS AND CHARACTERIZATION OF NANOCOMPOSITE THIN FILMS FOR THE ELABORATION OF ENERGY SAVING APPLICATIONS, O. Makrygenni

P.17 ELABORATION OF TRANSPARENT COATING MADE OF TRANSITION METAL CLUSTERS FOR NEAR INFRARED AND UV RADIATION BLOCKING, C. Lebastard

P.18 THE OUZO EFFECT TO SELECTIVELY ASSEMBLE MOLYBDENUM CLUSTERS INTO NANOMARBLES OR NANOCAPSULES WITH INCREASED HER ACTIVITY, F. Sciortino

P.19 MESOPOROUS OXIDES TEMPLATING THE GROWTH OF OPTICALLY ACTIVE PEROVSKITE NANOCRYSTALS, V. Malgras


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