The 9th IRP NextPV International Workshop Program

Venue: Originally at IPVF and C2N, goes online! Video conferencing software will be Cisco Webex Teams.

Date: 24th-27th November 2020

Program overview:

	NextPV workshop			NextPV LIMMS joint event
	Tue. 24th	Wed. 25th	Thu. 26th	Fri. 27th
FR 8:00-9:20am JP 4:00-5:20pm	Welcome address	Systems and modules (2 presenters)	III-V and advanced concepts 2 (3 presenters)	Introduction
	Perovskite 1 (3 presenters)			Session 1 (3 presenters)
		Characterization		
		Poster flashtalks 1	Poster flashtalks 2	
20 min break				
FR 9:40-11:00am JP 5:40-7:00pm	Perovskite 2 (2 presenters)	Poster session 1 (40min)	Poster session 2 (40min)	Session 2 (4 presenters)
	Quantum dots and organic (2 presenters)	III-V and advanced concepts 1 (2 presenters)	Solar to hydrogen	
			Concluding remarks	Concluding remarks
10 min break				LIMMS Beaujolais Party!
FR 11:10-12:10am JP 7:10-8:10pm	1h board meeting	Online social event to be defined		

Format:

Presentation format: 15 min + 5 minutes questions

Poster format: 2 min flashtalks with 1 slide per poster, followed by 40 min poster sessions.

Detailed program

Tuesday, 24th November 2020

8:00^{FR} / 4:00^{JP} Welcome addresses

Perovskite Session 1

8:20^{FR} / 4:20^{JP} Ludmila Cojoraru, ISM
Integration of perovskite solar cells with supercapacitors for energy conversion-storage devices

8:40^{FR} / 4:40^{JP} Takeru Bessho, Segawa Laboratory
Present status of perovskites solar cells

9:00^{FR} / 5:00^{JP} Eric Cloutet and Thierry Toupance, LCPO and ISM
Study of Ionic liquid type molecules and macromolecules for Perovskite solar cells

9:20^{FR} / 5:20^{JP} *20 min break*

Perovskite Session 2

9:40^{FR} / 5:40^{JP} Philip Schulz, IPVF
Interfaces and Stability of Halide Perovskite Semiconductors

10:00^{FR} / 6:00^{JP} Samy Almosni, Saule technology
Perovskite modules for IoT applications – a promising market entry point

Organic and quantum dots

10:20^{FR} / 6:20^{JP} Takaya Kubo, Segawa Laboratory
Solution processed quantum dot solar cells

10:40^{FR} / 6:40^{JP} Robin Szymanski, IMS
Design of novel ternary blend for industry relevant polymer solar cell

11:00^{FR} / 7:00^{JP} *10 min break*

11:10^{FR} / 7:10^{JP} Board Meeting

Wednesday, 25th November 2020

Systems and modules

8:00[FR] / 4:00[JP] Margot Gaétani-Lisseo, LAAS
Microgrids

8:20[FR] / 4:20[JP] Maxime Darnon, LN2
Concentrated photovoltaics: from materials to system

8:40[FR] / 4:40[JP] Muriel Bouttemy, ILV
Advanced chemical characterization of photovoltaic materials and modules: from fundamentals to application

Poster session 1

9:00[FR] / 5:00[JP] Poster Flashtalks
2 min flashtalks for 10 posters

9:20[FR] / 5:20[JP] *20 min break*

9:40[FR] / 5:40[JP] Poster session
40 minutes

III-V materials and advanced concepts 1

10:20[FR] / 6:20[JP] Kentaroh Watanabe, Sugiyama Laboratory
III-V based PV R&D program in Japan: High-efficiency and low-cost PV module loaded on the mobile object

10:40[FR] / 6:40[JP] Maxime Levillayer, LAAS
Development of InGaAsN subcells and degradation study under irradiation

11:00[FR] / 7:00[JP] Social event to be defined

Thursday, 26th November 2020

III-V materials and advanced concepts 2

8:00[FR] / 4:00[JP] Ryo Tamaki, Okada Laboratory
Reciprocity relation in InAs quantum dot solar cells via absolute luminescence spectroscopy

8:20[FR] / 4:20[JP] Nicolas Cavassilas, IM2NP
Balancing of quantum-dots intermediate band solar cells with a tunnel barrier

8:40[FR] / 4:40[JP] Sodabanlu Hassanet
High-speed III-V MOVPE growth for solar cells

Poster session 2

9:00[FR] / 5:00[JP] Poster Flashtalks
2 min flashtalks for 10 posters

9:20[FR] / 5:20[JP] *20 min break*

9:40[FR] / 5:40[JP] Poster session
40 minutes

10:20[FR] / 6:20[JP] Masakazu Sugiyama
Title TBD (Solar hydrogen project)

10:40[FR] / 6:40[JP] Concluding remarks

NextPV LIMMS joint event

Venue: Online only. The video conferencing software will be Cisco or Zoom. An access link will be provided ahead of the event.

Friday, 27th November 2020

8:00^{FR} / 4:00^{JP}	*Introduction*
8:20^{FR} / 4:20^{JP}	Masahiro Nomura, LIMMS, IIS *Thermal energy transfer by surface phonon polaritons in SiN nanofilm*
8:40^{FR} / 4:40^{JP}	Maxime Giteau, NextPV, Okada Laboratory *Understanding the cooling mechanisms of hot carriers in ultrathin GaAs layers*
9:00^{FR} / 5:00^{JP}	Marc Bescond, LIMMS, CNRS *High performance thermionic cooling devices based on tilted-barrier semiconductor heterostructures*
9:20^{FR} / 5:20^{JP}	Sylvain Chambon, NextPV & LIMMS, IIS *WATER-PV: an ANR project between LIMMS and NextPV*
9:30^{FR} / 5:30^{JP}	*10 min break*
9:40^{FR} / 5:40^{JP}	Hiroshi Toshiyoshi, LIMMS, IIS *How do we define the efficiency of MEMS vibrational energy harvester?*
10:00^{FR} / 6:00^{JP}	Cedric Ayela, NextPV, IMS *Engineering polymer MEMS for Mechanical energy harvesting*
10:20^{FR} / 6:20^{JP}	Anthony Genot, LIMMS, CNRS *Mapping the crystallization diagram of AuNP super lattices*
10:40^{FR} / 6:40^{JP}	*Concluding remarks and LIMMS Beaujolais Party!*

Poster sessions

Poster session 1, Wednesday November 25th, 9:40[FR] / 5:40[JP]

Eco-friendly $AgBiS_2$ Nanocrystal / ZnO Nanowire Heterojunction Solar Cells with Enhanced Carrier Collection	Y. Xiao, H. Wang, T. Kubo, H. Segawa
Improvement of PV characterization for perovskite solar devices	H. Tobita, K. Tada, F. Awai, T. Bessho, S. Uchida, H. Segawa
Perovskite/CIGS spectral splitting double junction solar cell with 28% power conversion efficiency	M. Nakamura, K. Tada, T. Kinoshita, T. Bessho, C. Nishiyama, I. Takenaka, Y. Kimoto, Y. Higashino, H. Sugimoto, H. Segawa
Synthesis of rutile phase TiO_2 nano particle and its application to perovskite solar cells	M. Furue, T. Bessho, F. Awai, K. Tada, H. Wang, H. Segawa
A Facile Ionic Compound Modification Of Tin Oxide Electron Transport Material To Enhance The Properties of Perovskite Solar Cell	C. C. Lin, T. N. Murakami, M. Chikamatsu, T. Bessho and H. Segawa
Surface Modification of Mixed Halide Perovskite Solar Cells: Application of Carbon-Based Additives	Claire Bapaume (IPVF)
Impact of Carbon Nanotube Growth on the Interfacial Composition and Energetics of Hybrid Organic Metal Halide Perovskites	Javid Hajhemati (IPVF)
Novel Combined Deposition Method of Sputtering and Evaporation for $CuGaS_2$ Thin Films	M. Kim, N. Ahsan, T. Logu, N. Miura, A. Gupta, Z. Jehl, Y. Okada
Effects of Swift Heavy Ion Irradiation on $CuInS_2$ thin films and its Solar Cells	T. Logu, N. Ahsan, S. Kalainathan, M. Kim, K. Sethuraman, K. Asokan, Y. Okada.
Study of Te Doped $CuGaS_2$ Thin Films Deposited for Solar Cell Application	N. Ahsan, R. F. J. Qiu, T. Logu, Vijayan, S. Kalainathan, Y. Okada

Poster session 2, Thursday November 26th, 9:40[FR] / 5:40[JP]

Luminescence Characterization of III-V cells	Hao Xu (Sugiyama laboratory)
Wire-on-well structure for good carrier collection and reduced voltage loss	Meita Asami (Sugiyama laboratory)

Z-scheme based on Van der Walls heterojunction for hydrogen production	Paul Dalla Valle (IM2NP)
Graphene transfer for remote epitaxy substrate fabrication	Amaury Delamarre (C2N)
TBD (Systems topic)	Edgar Sepulveda (LAAS)
Influence of shape, size and chemical passivation on the perimeter recombination in GaAs and dilute nitride GaAs solar cells	Moana Desbordes (LAAS)
TBD (Solar Park)	Maxime Darnon (LN2)