



# VASSCAA-9 - The 9th Vacuum and Surface Science Conference of Asia and Australia

## Monday 13 August 2018

### Speaker Sessions and Seminars: Thin Films - 1 (11:30-12:15)

time	[id] title	presenter
11:30	[90] Scaling lab research to engage the manufacturing industry: a story of vacuum thin film coatings	Dr EVANS, Drew

### Speaker Sessions and Seminars: IUVSTA - Highlight Seminars - 1 (11:30-12:15)

time	[id] title	presenter
11:50	[60] X-ray photoelectron spectroscopy as a tool for control superlattice heterostructures quality and surface bilayer formation	Dr MARKOWSKI, Leszek

### Speaker Sessions and Seminars: Magnetic surfaces, interfaces and nanostructures - 1 (11:30-12:15)

time	[id] title	presenter
11:30	[128] Interface Engineering and Emergent Magnetism in Oxide Heterostructures	Prof. ARIANDO, A.

### Speaker Sessions and Seminars: IUVSTA - Highlight Seminars - 2 (14:30-15:00)

time	[id] title	presenter
14:30	[146] Quantum-Based Pascal and The End of Mercury Manometers	Dr HENDRICKS, Jay

### Speaker Sessions and Seminars: Thin Films - 2 (14:30-15:00)

time	[id] title	presenter
14:30	[145] Quinary indium gallium zinc aluminum oxide films and thin-film transistors	Prof. LEE, Ching-Ting

### Speaker Sessions and Seminars: Magnetic surfaces, interfaces and nanostructures - 2 (14:30-15:00)

time	[id] title	presenter
14:30	[87] Neutron scattering techniques for understanding restricted dimensionality in magnetism: interfaces, surfaces and more!	RULE, Kirrily

### Speaker Sessions and Seminars: Thin Films - 3 (15:30-18:00)

time	[id] title	presenter
15:30	[144] Key Materials Issues in Co-Sputtered Aluminium-Gallium Oxide Films and Their Applications to Solar-Blind Photodetectors	Prof. WUU, Dong-Sing

16:00	[0] A Hybrid Hydrogen Storage System Based on Hollow Glass Microspheres	Dr EISENMENGER-SITTNER, Christoph
16:30	[7] Surface hardness of flexible carbon fiber sheets enhanced by deposition of organosilicon oxynitride thin films with an atmospheric pressure plasma jet	Prof. LIN, Yung-Sen
16:45	[17] Determining the effect of substrate cleaning on the solution stability of plasma polymer films	Dr JARVIS, Karyn
17:00	[21] Reactive sputter deposition of transparent and low refractive-index MgF <sub>2</sub> thin films using a double-grid negative-ion retarding electrode	Prof. KUSANO, Eiji
17:15	[41] Evaluation of Graded Composite Film Morphology	Prof. NOVAK, Stanislav
17:30	[59] Dependence of Thermal Conductivity of MPCVD Diamond Thin Films on Oxygen Concentration	Ms TUZ ZAHRA, Fatima

**Speaker Sessions and Seminars: IUVSTA - Highlight Seminars - 3 (15:30-18:00)**

time	[id] title	presenter
15:30	[15] Low-pressure/environmental electron and photoelectron techniques; a new age for a merged biointerface analysis.	Dr MIGUEL, Manso Silvan
16:00	[254] Recent highlights in plasma science and applications	Dr O'CONNELL, Deborah
16:30	[177] Recent Advances in Surface Engineering	Prof. PETROV, Ivan
17:00	[253] Highlights of the IUVSTA Thin Film Division 2018	YUBERO, Francisco
17:20	[251] Nanoscience as a discipline and its impact on modern society	Prof. MONTELIUS, Lars
17:40	[147] Oxide based electronics for neuromorphic computing	Prof. ROBERT, Elliman

**Speaker Sessions and Seminars: Magnetic surfaces, interfaces and nanostructures - 3 (15:30-17:30)**

time	[id] title	presenter
15:30	[33] Octahedral Engineering and Interfacial Structure of Heteroepitaxial Complex Oxides	Prof. QIAO, Liang
16:00	[23] Manipulating the electronic structure and magnetism of spin-orbit Mott insulator by tailoring superlattices	Prof. SHEN, Dawei
16:30	[127] Confinement-Induced Giant Spin-Orbital-Coupled Magnetic Moment of Co Nanoclusters in TiO <sub>2</sub> Films	Prof. YI, Jiabao
17:00	[137] Neutron studies of iron-based superconductors	Ms YANG, Jie-Yu (Shirley)
17:15	[64] Hidden complex magnetic interaction at La <sub>0.67</sub> Sr <sub>0.33</sub> O <sub>3</sub> /SrTiO <sub>3</sub> :Nb (111) interface	Dr MENG, Meng

## Tuesday 14 August 2018

### Speaker Sessions and Seminars: Plasma Science and Techniques - 1 (10:00-11:00)

time	[id] title	presenter
10:00	[80] Small high density plasma sources for Focussed Ion Beam Applications	BOSWELL, Rod

### Speaker Sessions and Seminars: Thin Films - 4 (10:00-11:00)

time	[id] title	presenter
10:00	[142] Performance of ZnGa <sub>2</sub> O <sub>4</sub> deep ultraviolet photodetectors	Prof. HORNG, Ray-Hua
10:30	[52] Broadband extraordinary optical transmission in a narrow subwavelength gap of infrared wire-grid-polarizers	KIM, Wonyoung
10:45	[58] Simple linear relationship between reactive gas flow rate and discharge power at mode transition on reactive sputter deposition of metal oxides	Prof. NAKANO, Takeo

### Speaker Sessions and Seminars: Magnetic surfaces, interfaces and nanostructures - 4 (10:00-11:00)

time	[id] title	presenter
10:00	[76] The Magnetic Properties of Individual Atoms/Molecules on Solid Surfaces	Prof. HAIMING, Guo
10:15	[139] Modifying the magnetic reversal mechanism of an exchange biased partially oxides Mn <sub>x</sub> O <sub>y</sub> /Ni <sub>80</sub> Fe <sub>20</sub> bilayer through oxygen ion implantation	ZHANG, Ji
10:30	[112] Iron spin-reorientation transition by dynamic interface alloy formation with Mn	Prof. KOMORI, F.

### Speaker Sessions and Seminars: Surface Science - 1 (11:30-12:15)

time	[id] title	presenter
11:30	[74] Modelling Driven Discoveries in Molecular Spectroscopy	Prof. WANG, Feng

### Speaker Sessions and Seminars: Biosurfaces, Interfaces & Nanostructures - 1 (11:30-12:15)

time	[id] title	presenter
11:30	[68] Antimicrobial nanobiomaterials for scaffolds and medical devices	Dr O'CONNOR, Andrea

### Speaker Sessions and Seminars: Plasma Science and Techniques - 2 (11:30-12:15)

time	[id] title	presenter
11:30	[103] Atmospheric pressure plasmas for the design and tailoring of surfaces and coatings : from fundamental understanding to dedicated surface properties.	RENIERS, François

### Speaker Sessions and Seminars: Biosurfaces, Interfaces & Nanostructures - 2 (14:30-15:15)

time	[id] title	presenter
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14:30	[224] Studying Structure at the Liquid/Liquid Interface by Neutron and X-ray Scattering.	HOLT, Stephen
15:00	[56] Hierarchical biomimetic porous tantalum fabricated by liquid metal dealloying for biomedical applications	Mr MENDIS, Sanka

**Speaker Sessions and Seminars: Surface Engineering - 1 (14:30-15:15)**

time	[id] title	presenter
14:30	[258] Anti-fouling and Slippery Properties of Lubricant-Infused Surfaces	NETO, Chiara

**Speaker Sessions and Seminars: Surface Science - 2 (14:30-15:15)**

time	[id] title	presenter
14:30	[93] Observation of a resonant-type ground state in graphene intercalated with cerium	Prof. HWANG, Choongyu
15:00	[30] Capturing interface processes at the atomic scale by high-speed surface X-ray diffraction	SHIRASAWA, Tetsuroh

**Speaker Sessions and Seminars: Vacuum Science and Technology - 1 (15:30-16:45)**

time	[id] title	presenter
15:30	[100] High resolution and radiation-damage free inverse photoelectron spectroscopy	YOSHIDA, Hiroyuki
16:15	[261] Towards ARPES at the Australian Synchrotron: 3rd Generation Toroidal Angle Resolving Electron Energy Spectrometer	TADICH, Anton

**Speaker Sessions and Seminars: Surface Engineering - 2 (15:30-15:45)**

time	[id] title	presenter
15:30	[28] Dye Giant Absorption and Light Confinement Effects in Porous Bragg Microcavities	Dr YUBERO, Francisco

**Speaker Sessions and Seminars: Surface Science - 3 (15:30-17:00)**

time	[id] title	presenter
15:30	[29] Entropy-Driven Spontaneous Dissociation of Fluoroacetic Acids in Ice	Prof. KANG, Heon
16:00	[77] Diamond Surface Functionalization and Doping for Carbon-based Electronics	Dr QI, Dongchen
16:30	[102] Adsorption and absorption of hydrogen in Titanium dioxide	Prof. FUKUTANI, Katsuyuki

## Wednesday 15 August 2018

### Speaker Sessions and Seminars: Surface Science - 4 (10:00-10:30)

time	[id] title	presenter
10:00	[18] Molecular nanoarchitectures from on-surface reactions and assembly	MACLEOD, Jennifer

### Speaker Sessions and Seminars: Plasma Science & Techniques - 3 (10:00-10:30)

time	[id] title	presenter
10:00	[96] Development of scalable plasma polymerisation processes	WHITTLE, Jason

### Speaker Sessions and Seminars: Vacuum Science & Technology - 2 (11:00-12:00)

time	[id] title	presenter
11:00	[89] Atmospheric-pressure microwave plasma system for cleaning and deposition	Prof. RUZIC, David N.
11:15	[140] Diamond-Edge Gaskets for the Ultrahigh Vacuum Systems	Mr HSIUNG, Gao-Yu
11:45	[95] Molecular layer formation on cooled sapphire mirrors in KAGRA Japanese gravitational wave observatory	Mr HASEGAWA, Kunihiko

### Speaker Sessions and Seminars: Plasma Science & Techniques - 4 (11:00-12:00)

time	[id] title	presenter
11:00	[50] Mild plasma configuration yielding efficient doping on graphene surface	Prof. JEONG, Goo-Hwan

### Speaker Sessions and Seminars: Surface Science - 5 (11:00-12:00)

time	[id] title	presenter
11:00	[24] The Experimental Realization of Polyphony in Borophene	Prof. CHEN, Lan
11:30	[53] Surface-confined polymerisation: synthetic chemistry without a beaker	LIPTON-DUFFIN, Josh

### Speaker Sessions and Seminars: Nanometer Scale Science & Technology - 1 (14:15-15:00)

time	[id] title	presenter
14:15	[257] Functional surfaces and devices enabled by two-dimensional materials	JIA, Baohua

### Speaker Sessions and Seminars: Electronic Materials & Processing - 1 (14:15-15:00)

time	[id] title	presenter
14:15	[259] Zero resistance materials and technologies	Prof. WANG, Xiaolin

### Speaker Sessions and Seminars: Surface Science - 6 (14:15-15:00)

time	[id] title	presenter
14:15	[63] The role of lattice dynamics in the superconductivity enhancement at FeSe/SrTiO <sub>3</sub> interface	Prof. JIANDONG, Guo
14:30	[69] On-surface bottom-up synthesis of azine derivatives displaying strong acceptor behavior	Prof. MARTIN-GAGO, jose a.
14:45	[110] Free-Standing Graphene on 3C-SiC Nanostructures	Mr AMJADIPOUR, Mojtaba

**Speaker Sessions and Seminars: Applied Surface Science - 1 (15:30-17:15)**

time	[id] title	presenter
15:30	[106] Sulfides, Surfaces and Synchrotrons	Prof. HARMER, Sarah
16:15	[22] XPSSurfA - An Online Open Access XPS Database	Dr BARLOW, Anders
16:45	[115] Rapid multivariate analysis of 3D ToF-SIMS data: graphical processor units (GPUs) for large-scale principal component analysis	CUMPSON, Peter

**Speaker Sessions and Seminars: Electronic Materials & Processing - 2 (15:30-17:45)**

time	[id] title	presenter
15:30	[86] Electric Field Tuned Quantum Phase Transition from Topological to Conventional Insulator in Few-Layer Na <sub>3</sub> Bi	EDMONDS, Mark
16:00	[91] Electronic Structure and Electron Dynamics in Single-Layer Transition Metal Dichalcogenides	Dr GRUBISIC-CABO, Antonija
16:30	[38] Defects physics in emergent 2D material SnSe with binary black phosphorus lattice	Prof. ZHENG, Yi
17:00	[117] Elemental 2D Materials Beyond Graphene	Dr DU, Yi

**Speaker Sessions and Seminars: Nanometer Scale Science & Technology - 2 (15:30-16:00)**

time	[id] title	presenter
15:30	[141] Growth and fabrication of molybdenum disulfide devices	Prof. HSIANG-CHEN, Wang

**Speaker Sessions and Seminars: Renewable Energy Technologies (16:00-17:30)**

time	[id] title	presenter
16:00	[78] Nano- and microfabrication technologies for photovoltaic and supercapacitor device applications	Prof. YU, Jae Su
16:45	[143] Performance improvement of perovskite solar cells using novel structure design	Prof. LEE, Hsin-Ying

## Thursday 16 August 2018

### **Speaker Sessions and Seminars: Accelerator / Radiation Sciences & Technology - 1 (10:00-10:45)**

time	[id] title	presenter
10:00	[82] What is Brilliant and BRIGHT at the AUstralian Synchrotron	Prof. JAMES, Michael

### **Speaker Sessions and Seminars: Applied Surface Science - 2 (10:00-10:45)**

time	[id] title	presenter
10:00	[97] Epitaxial growth of graphene and 2D heterostructures on SiC for nanoelectronic applications	MOTTA, Nunzio
10:30	[55] Lateral graphene/h-BN heterostructures from chemically converted epitaxial graphene on SiC (0001)	BRADFORD, Jonathan

### **Speaker Sessions and Seminars: Accelerator / Radiation Sciences & Technology - 2 (11:15-12:15)**

time	[id] title	presenter
11:15	[255] Overview of the Neutron Scattering Capabilities at the OPAL Research Reactor	Dr SCHULZ, Jamies
11:45	[274] Neutron Imaging Facility DINGO targetting new fields of research with high resolution upgrade	Dr GARBE, Ulf

### **Speaker Sessions and Seminars: Applied Surface Science - 3 (11:15-12:15)**

time	[id] title	presenter
11:15	[44] Tuning the Electronic Structure of NiO by Li doping for Electrocatalytic Water Oxidation	Prof. ZHANG, Kelvin H.L.
11:45	[27] Controlling the photocatalytic activity of TiO <sub>2</sub> thin films grown by atomic layer deposition	Prof. PETRAVIC, Mladen

### **Speaker Sessions and Seminars: Catalytic Materials and Processes - 1 (14:30-15:15)**

time	[id] title	presenter
14:30	[88] Rational Design of Nano-Catalysts for Sustainable Chemicals and Fuels: Insights from Theory and Simulation	Prof. STAMPFL, Catherine

### **Speaker Sessions and Seminars: Accelerator / Radiation Sciences & Technology - 3 (14:30-15:15)**

time	[id] title	presenter
14:30	[175] Micro- and nano-tomography with nanoparticles	Prof. HWU, Yeukuang

### **Speaker Sessions and Seminars: Catalytic Materials and Processes - 2 (15:45-16:30)**

time	[id] title	presenter
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15:45	[16] An ex situ near edge X-ray absorption fine structure spectroscopy study of metal phthalocyanine catalysts for CO2 reduction	Dr VEDER, Jean-Pierre
16:00	[6] Oxygen Reduction Reaction Activity for Pt/Zr/Pt(111) Model Catalyst Surfaces Prepared by Arc-plasma deposition	Prof. WADAYAMA, Toshimasa
16:15	[118] Surface defect engineering in semiconducting (photo)electrocatalyst	Mr FENG, Haifeng

**Speaker Sessions and Seminars: Accelerator / Radiation Sciences & Technology - 4 (15:45-16:30)**

time	[id] title	presenter
15:45	[94] The Present Status of Siam Photon Source and Recent Development of Soft X-ray Beamline	PHOTONGKAM, Pat