

# Indo Japan Bilateral Symposium on Futuristic Materials and Manufacturing

Day1 - 16<sup>th</sup> July, 2018

Auditorium

Hall 3

Hall 2

0900-0945 Inauguration

0945-1000

Coffee/Tea Break

1000-1200

## Session 1

### I1 Dr Gerald Tennyson

TCS Research, Pune

*Optimized materials and smart manufacturing for high performance automobiles*

### I2 Prof Y Mikami, Nagaoka UT, Japan

*History of Japanese industrial development*

### I36 Prof Nilesh J Vasa, IIT Madras

*Different approaches for pulsed laser surface structuring of thin films for photovoltaics and automotive applications*

### I4 Prof H Suematsu, Nagaoka UT, Japan

*Improvement of the critical current density properties in  $Sr_2Ca_{(n-1)}Cu_nO_Y$  superconductors by insertion of organic molecules*

1200-1300

## Session 2

### I5 Dr Dheepa Srinivasan, IIT Ropar

*Additive manufacturing – a game changer in manufacturing technologies*

### I6 Mr T Yoshiki, Rigaku Co, Japan

*Recent development of XRD analysis for lithium ion battery materials*

1300 - 1345

Lunch

1345-1545

## Session 3

### I7 Prof D Nakamura, Kyushu Univ, Japan

*Fabrication of ZnO nano/micro crystals by laser ablation-based technique*

### I8 Prof H Inoue, Tokyo Inst of Tech, Japan

*Current states of arts of thermographic NDT in Japan*

### I9 Mr S Watanabe, Shimadzu Cor, Japan

*Introduction of Shimadzu proprietary application contributing to materials and manufacturing for efficient automobiles*

## Session 4

### I10 Prof K Sato, Nagaoka UT, Japan

*Application of photocatalyst materials for the removal of heavy metal ions and reduction of carbon dioxide to methane in an aqueous environment*

### I11 Prof Raghuram Chetty, IIT Madras

*Shape-controlled fabrication of Pt-based electrodes towards fuel cell application*

### I12 Mr C Takeuchi, JEOL India

*Introduction of JEOL product and JEOL India*

**C1 Prof S Senthilvelan**, IIT Guwahati

*Influence of laser processing on the tribological performance of AISI 52100 chrome steel*

**C2 Dr S Anand Kumar**, IIT Jammu

*Investigation on chemical machining of GaN nano-wires synthesized by thermal chemical vapour deposition*

**C3 Prof G L Samuel**, IIT Madras

*Deterministic recursive model and chaos for energy consumption during electrical discharge machining*

**C4 Dr S Jayavel**, IIITDM Kancheepuram

*Surface temperature in network-reinforced polymer composite – Taguchi Analysis in Material Design*

1545-1600

Tea & Coffee

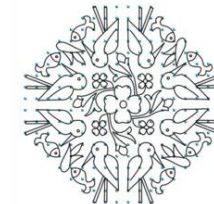
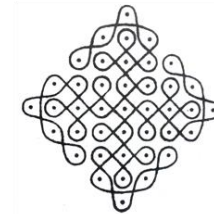
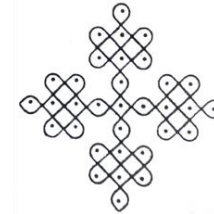
1600-1700

Visit to Stalls / Exhibition / Special Lecture by Prof Tom Kelly

1800-2100

Conference Dinner

*I – Invited Lecture; Duration 30 min (25 Minutes Presentation + 5 Minutes Discussion); C – Contributory Presentations; Duration 15 min (12 Minutes Presentation + 3 Minutes Discussion)*



## Day 2, 17<sup>th</sup> July 2018

	Hall 3	Hall 2	Hall 1
0900-1100	Session 5	Session 6	
	<p><b>I13 Prof M Okazaki</b>, Nagaoka UT, Japan <i>High temperature gas turbine materials and coatings matching with renewable energy system</i></p> <p><b>I14 Prof H Murakami</b>, NIMS, Japan <i>Application of Ir for ultra-high temperature applications</i></p> <p><b>I15 Dr M Vasudevan</b>, IGCAR Kalpakkam <i>Application of soft computing techniques for modelling and optimization of welding processes</i></p> <p><b>C5 Dr A Vinoth</b>, SRM <i>Optimization of mechanical characteristics of UHMWPE composites using computational intelligence</i></p> <p><b>C6 Dr R Ganesh Narayanan</b>, IIT Guwahati <i>Friction stir additive manufacturing of Al alloy</i></p>	<p><b>I16 Prof N Yamada</b>, Nagaoka UT, Japan <i>Multifunctional photovoltaic module and system for area-constrained applications</i></p> <p><b>I17 Prof T Honma</b>, Nagaoka UT, Japan <i>Glass-ceramics for sodium ion batteries</i></p> <p><b>I18 Prof T Nakayama</b>, Nagaoka UT, Japan <i>Fabrication of fine structure by 3Dnanoprinter and its motion control with nanosecond pulse power</i></p> <p><b>C7 Mr S Dinesh Kumar</b>, IIT Madras <i>Ferroelectric and ferrite based magnetoelectric composites for magnetic field sensor and energy harvesting applications</i></p> <p><b>C8 Ms S Vahidhabanu</b>, CERI-CSIR <i>Magnetic core layered double hydroxide over Halloysite as robust adsorbent for Congo red dye removal in aqueous solution</i></p>	
1100-1115		Tea Break	
1115-1315	Session 7	Session 8	Session 9
	<p><b>I19 Prof S Datta</b>, SRMIST, Chennai <i>Materials informatics using computational intelligence techniques for designing hard tissue replacements</i></p> <p><b>I27 Prof J Ramkumar</b>, IIT Kanpur <i>Numerical simulation of melt hydrodynamics in laser material processing</i></p> <p><b>C9 Mr Shubrajit Bhaumik</b>, SRMIST Chennai <i>Data driven design of castor oil based biodegradable lubricants with multiple nano friction modifiers</i></p> <p><b>C10 Mr Rahul Kesharwani</b>, IIT Patna <i>Design and conceptualization of friction stir AM tool for the development of multi-layered gradient structure</i></p> <p><b>C11 Mr Pankaj Dhaka</b>, IIT Madras <i>Finite element modelling of fretting contact</i></p> <p><b>C12 Prof Santosh Kumar</b>, IIT BHU <i>Developments in digital forming methods: setup, simulation, analysis &amp; experiments</i></p>	<p><b>I21 Prof B S Murty</b>, IIT Madras <i>Excitements and challenges in high entropy alloy research</i></p> <p><b>I22 Prof M Takeda</b>, Nagaoka UT, Japan <i>Materials and devices for direct thermal to electric energy conversion</i></p> <p><b>C13 Mr Kartik Sau</b>, Tohoku Univ, Japan <i>Modelling and simulation of fast ion conductors: <math>M_2 B_{12} H_{12}</math> (<math>M = Li, Na</math>)</i></p> <p><b>C14 Mr Sujit Mulay</b>, IIT Madras <i>Finite element analysis of laser forming process</i></p> <p><b>C15 Mr Mathew John</b>, IIT Madras <i>Damage analysis of post-impacted fatigue loaded CFRP laminates using active thermography</i></p> <p><b>C16 Prof S Senthilvelan</b>, IIT Guwahati <i>Development and performance evaluation of bamboo composite</i></p>	<p><b>I23 Prof K Ohnuma</b>, Nagaoka UT, Japan <i>The effects of chemicals on pregnancy: in vitro studies with human iPSC cells</i></p> <p><b>I24 Prof T S Sampath Kumar</b>, IIT Madras <i>Biofunctionalization of metallic implants by severe plastic deformation techniques</i></p> <p><b>I25 Dr R Ramaseshan</b>, IGCAR <i>Tuning of mechanical properties of AlN and doped AlN thin films</i></p> <p><b>C17 Mr Vineet Paliwal</b>, IIT Madras <i>Prediction of stability lobes diagram with the application of laser vibrometer</i></p> <p><b>C18 Dr Dhilip A</b>, PSG Coimbatore <i>Studies on dry sliding wear characteristics of High Velocity Oxy Fuel sprayed iron based amorphous coatings</i></p>
1315-1400		Tea /Coffee Break	
1400-1545	Session 10	Session 11	Session 12
	<p><b>I26 Prof Y Miyashita</b>, Nagaoka UT, Japan <i>Study on fatigue characteristic of magnesium alloy for structural material application</i></p> <p><b>I20 Prof Satyesh K Yadav</b>, IIT Madras <i>Accelerating design of materials from electronic structure modeling</i></p>	<p><b>I28 Prof R Gopalan</b>, ARCI Chennai <i>Key energy materials for automotive applications</i></p> <p><b>I29 Dr C Neelakandan</b>, 3M India <i>3M Solutions for Railways</i></p>	<p><b>I30 Prof T Nishimura</b>, Nagaoka UT, Japan <i>Epi-alleles cause phenotypic changes in plants— technical basis for epigenetic breeding</i></p> <p><b>I31 Prof R Jayaganthan</b>, IIT Madras <i>Fatigue studies on additively manufactured alloys for biomedical applications</i></p>

**C19 Mr Md Anwar Ali**, IIT Patna  
*Properties enhancement in low carbon steels and  $Al_{0.5}CoCrCuFeNi$  high entropy alloy using friction stir processing*

**C20 Mr Prashanth Ganji**, JNTU  
*Ultra-Grain refinement and optimization of aluminium material properties using equal channel angular pressing (ECAP) in DEFORM*

**C21 Ms Sweta Saroj**, IIT Patna  
*Ductilization and strength trade off in functionally graded material using friction stir processing*

**C22 Mr Finney Charles**, IIT Madras  
*Rolling contact fatigue behaviour of polymer nanocomposite against metallic materials*

**C23 Dr Murugan**, PSG Coimbatore  
*Wire arc additive manufacturing by robotic MIG welding of nickel base super alloy*

**C24 Mr S S Mani Prabu**, IIT Indore  
*Phase transformation behaviour and actuation studies of friction stir welded NiTi shape memory alloy for automotive applications*

**C25 Ms Y Abe**, Nagaoka UT, Japan  
*Evaluation of environmental effects on interface strength of dissimilar joint between metal and resin*

**C26 Mr T Ui**, Nagaoka UT, Japan  
*Direct observation of seepage flow inside the soil matrix by using the method of RIMS*

**C27 Mr S Nakagawa**, Nagaoka UT, Japan  
*Mechanism of water treatment by pulsed discharge*

1545-1600

Tea break

1600-1730

Session 13

**I32 Prof Aravindan**, IIT Delhi  
*Fabrication of nano structured surfaces*

**C28 Dr M V Timmaraju**, IIITDM Kancheepuram  
*Low velocity impact behaviour of high performance thermoplastic composites*

**C29 Mr Sivakumar K**, IIITDM Kancheepuram  
*Design and development of continuous fibre thermoplastic sprocket for tracked vehicles and machines*

**C30 Mr Saran Theja**, JNTU India  
*Deep insights in development of graphene metal matrix composite engineered for light weight and high strength*

Session 14

**I33 Prof Y Otsuka**, Nagaoka UT, Japan  
*In vitro cyclic de-lamination of plasma-sprayed hydroxyapatite coating on Ti alloy substrate for medical implants*

**C31 Mr P Emmanuel**, IIT Madras  
*Pulsed Laser Deposition of SiC Thin Film On MgO Substrate Using  $Nd^{3+}$ :YAG*

**C32 Mr Prasanna Ram**, Vel Tech  
*Design and characterisation of graphene based antennas for energy harvesting applications*

**C33 Mr R Chezian**, Velmmal Chennai  
*Experimental analysis of naturally available antifouling biomaterials at nano-scale*

**C37 Dr Madhavan S**, IIT Madras  
*Fatigue behavior of cold metal transfer welded dissimilar automotive materials*

Session 15

**I34 Dr Kesavan Ravi**, Tohoku Univ Japan  
*Polymer metal integration via cold-spray*  
**I35 Dr M Jayaprakash**, IIT Indore  
*Fretting fatigue behavior of high strength alloys in structural applications*

**C34 Mr E Madhusudan Raju**, OU India  
*Modelling and analysis of disc brake mounted on the axle of a train*

**C35 Mr Prem Ranjan**, IIT Madras  
*Synthesis, characterization of  $MoO_3$  nanostructure by wire explosion process*

**C36 Mr Neelmani**, IIT Madras  
*Hydrogen generation using aluminium nanoparticles produced by wire explosion process*

1730-1800

Valedictory Function