EVENT SCHEDULE

16TH **OCTOBER**, **2014**

REGISTRATION 0900-1000 Hrs.

16TH **OCTOBER**, **2014**

INAUGURAL SESSION

1000-1200 Hrs.

KEYNOTE SPEAKER: PLASMA SPRAYED AlCoCrFeNi and MnCoCrFeNi HIGH ENTROPY ALLOYS: HIGH TEMPERATURE STABILITY, COATING ELASTIC PROPERTIES AND SURFACE ROUGHNESS

[Paper ID: 161] 1100HRS

CHRIS BERNDT, Faculty of Engg & Industrial Sciences, Swinburne University of Technology, Hawthorn, Victoria.

ORAL PRESENTATION SCHEDULE

PLENARY SESSION

DR. CHARLES M KAY (CHAIRMAN)

16TH **OCTOBER**, **2014**

1230-1430 Hrs.

- 1. PEENING OF SURFACES WITH COLD DRAWN STEEL PINS
 SEHIJPAL SINGH, Professor and Head, Guru Nanak Dev Engingineering College, Ludhiana
- 2. TQM ENVIRONMENT IN MANUFACTURING ORGANISATIONS [Paper ID: 162]

 SANDEEP GROVER, Professor, YMCA University of Science & Technology, NH-2, Sector-6, Mathura Road, Faridabad, Haryana
- 3. BARBARA SHALLOK, Professor, University of Warwick, International Digital Laboratory, WMG, Coventry, CV4 7AL, UK.

 1300HRS
- 4. ADVANCED MATERIALS AND MICRO MACHINING OF AL₂O₃ CERAMIC

 [Paper ID: 142] 1330Hrs

 ALAKESH MANNA, Professor, PEC University of Technology, India

TECHNICAL SESSION (A1)

DR. CHRIS BERNDT (CHAIRMAN)

16TH OCTOBER, 2014

1530-1730 Hrs.

HOT CORROSION STUDIES OF COLD SPRAYED NICRALY COATING ON NICKEL-BASED SUPERALLOY AT 900°C [Paper ID: 126]

Sukhminderbir Singh Kalsi, T.S. Sidhu, Harminder Singh

IMPROVEMENT OF WORKERS & WORK PLACE OF CONSTRUCTION SITE BY IMPLEMENTING 10S CONCEPT (5S FOR WORK PLACE & 5S FOR WORKERS) OF TPM MODEL FOR SMES: A CASE STUDY [Paper ID: 37]

Abhishek Jain, Rajbir Bhatti, Harwinder Singh

PROCESS PARAMETER OPTIMIZATION OF WIRE ELECTRICAL DISCHARGE MACHINING OF MG ALLOY (AZ91C) USING TAGUCHI METHODOLOGY [Paper ID: 16]
Vibhu Sharma, Manpreet Kaur

MECHANICAL BEHAVIOR OF FRICTION WELDED DISSIMILAR STEELS UNDER VARYING AXIAL PRESSURES [Paper ID: 38]

Amit Handa, Vikas Chawla

 $C_{60-n}X_n$ (X= B, N, Al & O) AS CATALYST FOR DEHYDROGENATION IN NaMH₄ (M = Al & B) [Paper ID: 114]

Meenakshi, Hitesh Sharma

THERMOGRAVIMETRIC INVESTIGATION OF MUSTARD STRAW AND ITS ASH IN OXIDIZING AND INERT ATMOSPHERE [Paper ID: 112]

Harmandeep Singh, Pawan Kumar Sapra, Balwinder Singh Sidhu

CHARACTERISTIC OF OXIDE COATINGS PRODUCED ON ALUMINIUM BY PEO PROCESS AT DIFFERENT FREQUENCY OF PULSED CURRENT [Paper ID: 64]

Wojciech Gebarowski, Stanislaw Pietrzyk

EXPERIMENTAL INVESTIGATION OF EROSION MECHANISMS OF SA192 AND SA210 GR A1 BOILER STEELS [Paper ID: 27]

Adarsh Kumar, Pawan Kumar Sapra

TECHNICAL SESSION (B1)

Dr. J.KARTHIKEYAN (CHAIRMAN)

16TH **O**CTOBER, **2014**

1530-1830 HRS.

STUDY AND ANALYSIS ON DIFFERERNT FLOW ARRANGEMENTS USING DIFFERENT FLUIDS IN MICRO CHANNEL HEAT SINK FOR HIGH PERFORMANCE [Paper ID: 45]

Neeraj Kumar, Nirmal Kant Singh, Harry Garg

FABRICATION AND COMPARISON OF WEAR BEHAVIOUR OF ALUMINIUM-FLYASH COMPOSITE WITH PURE ALUMINIUM [Paper ID: 139]

Harinderjit Singh, Niraj Bala, Lakhvir Singh

DEVELOPMENT AND CHARACTERIZATION OF ALUMINIUM BASED MATRIX USING 5% FLY ASH

Karamjot Grewal, Gagandeep Kaushal, Hazoor Singh Sidhu

AN EXPERIMENTAL ANALYSIS DURING MICRO MACHINING OF STAINLESS STEEL ON MICRO ELECTRIC DISCHARGE MACHINING [Paper ID: 81]

Sandeep Sharma, Charanjit Singh Kalra, Gurdeep Singh Deol

ELIMINATION OF HYDROGEN INDUCED CRACKS BY SLOW COOLING AFTER HOT ROLLING OF MEDIUM CARBON MOLYBDENUM STEEL BLOOMS [Paper ID: 46]

D. Ravichandar, K.B. Nagashanmugam, T. Balusamy

DEVELOPMENT OF MAGNETIC ABRASIVE FINISHING PROCESS TO FINISH BRASS RODS [Paper ID: 144]

Iqbal Singh, Gagandeep Kaushal, Hazor Singh Sidhu

COOLING METHOD INFLUENCE ON PROPERTIES OF FRCITION STIR PROCESSED AA6082
[Paper ID: 136]

Bhupinder Singh, Pardeep Kumar

STUDY ON PROCESS PARAMETERS OF MAGNETIC ABRASIVE FINISHING ON ALUMINIUM ALLOY TUBES [Paper ID: 143]

Jagwinder Singh, Gagandeep Kaushal

MAGNETIC PROPERTIES OF $(ZnS)_n$ (n = 1-16) NANO-CLUSTER DUE TO NON-MAGNETIC DOPING [Paper ID: 108]

Navjot Kaur, Kanchan L. Singh, Hitesh Sharma

EVALUATION OF WEAR, MECHANICAL AND METALLURGICAL PROPERTIES OF TIG RE-MELTED STELLITE 6 CLADDED OVER AISI-304 L STAINLESS STEEL [Paper ID: 72] Manjit Singh, Amit Handa, Sandeep Singh Sandhu

HOT CORROSION STUDIES ON HVOF SPRAYED Ni-20Cr COATED ASTM A213 TP347H BOILER STEEL AT 700°C [Paper ID: 47] T.S. Bedi, J.S. Gill, G. Kaushal

OXIDATION BEHAVIOR OF D-GUN SPRAYED WC-12Co AND Cr₃C₂-25NiCr on ASTM SAE213 T22 STEEL [Paper ID: 69]

Arminder Singh Walia, J. S. Gill, G. Kaushal

17TH OCTOBER, 2014

PLANERY SESSION

Dr. J.Karthikeyan (Chairman)

17TH OCTOBER, 2014

0900-1100 Hrs.

1. APPLICATIONS IN MANUFACTURING INDUSTRIES WITH FOCUS ON THERMAL SPRAY SURFACING FROM A JOB SHOP IN THE US 0900Hrs

CHARLES M KAY, R &D, ASB Industries, Inc, 1031 Lambert Street, Barberton, OH 44203.

2. NANO-MECHANICS TOWARDS ADVANCES STRUCTURED FUNCTIONAL MATERIALS [Paper ID: 160] 0930HRS

IN-SUK CHOI, Senior Research Scientist, High Temperature Energy Materials Research Center, Korea Institute of Science and Technology (KIST), Hwarangno 14-gil 5, Seongbuk-gu, Seoul, South Korea.

- 3. DEVELOPMENT OF NANO-STRUCTURED MATERIALS BY MECHANICAL PROCESSING 1000 HRS. HARPREET SINGH, School of Mechanical, Materials & Energy Engineering, IIT Ropar
- 4. POST TREATMENT OF THRMAL SPRAY COATINGS FOR HIGH TEMPERATURE APPLICATIONS

 BUTA SINGH SIDHU, Dean Academics, Punjab Technical University, Kapurthala

TECHNICAL SESSION (A1)

Dr. IN-SUK CHOI (CHAIRMAN)

17TH OCTOBER, 2014

1130-1230 Hrs.

SHORTLISTED PAPERS FOR AWARD OF BEST PAPER (Ph.D and M.Tech)

TECHNICAL SESSION (A2)

Dr. Harpreet Singh (Chairman)

17TH OCTOBER, 2014

1230-1430 Hrs.

INVESTIGATION FOR CONTROLLED DOUBLE PULSE GMAW THROUGH RESPONSE SURFACE METHODOLOGY BASED APPROACH [Paper ID: 120]

Mainak Sen, Manidipto Mukherjee, Tapan Kumar Pal

EFFECT OF INTERFACIAL LAYER ON THE EFFECTIVE THERMAL CONDUCTIVITY OF HIGHLY POROUS METAL FOAMS [Paper ID: 31]

Jyoti Rani, K. J. Singh, Ramvir Singh

PREDICTION OF EFFECTIVE THERMAL CONDUCTIVITY OF CU/SOLDER SYSTEM BY USING

INTERFACIAL LAYER IN TWO PHASE SYSTEM [Paper ID: 32]

Jyoti Rani, K. J. Singh, Ramvir Singh

ENHANCING THE PERFORMANCE OF LAPTOP BATTERY THROUGH THERMAL MANAGEMENT SYSTEM BY THE APPLICATION OF PHASE CHANGE MATERIAL JACKET [Paper ID: 61] Suman Jha, Ethiraj. N

A REVIEW ON THE ROLE OF SURFACE MODIFICATION TECHNIQUES IN ENHANCING EROSION RESISTANCE OF BOILERS COMPONENTS [Paper ID: 36]

Vineet Shibe, Vikas Chawla

MATHEMATICAL MODELING OF TRANSVERSE COMPRESSIVE FAILURE IN COMPOSITE MATERIALS [Paper ID: 125]

Takeaki Nadabe

COMPUTER SIMULATION OF FRACTURE PROCESS IN COMPRESSIVE FAILURE OF CROSS-PLY LAMINATE OF COMPOSITE MATERIALS [Paper ID: 25]

Takeaki Nadabe

MATHEMATICAL MODELING OF LONGITUDINAL COMPRESSIVE FAILURE IN FIBER REINFORCED COMPOSITES AS SHEAR BANDING DUE TO STRAIN LOCALIZATION

[Paper ID: 101]
Takeaki Nadabe

TECHNICAL SESSION (B2)

DR. CHRIS BERNDT (CHAIRMAN)

17TH OCTOBER, 2014

1230-1430 Hrs.

FINITE ELEMENT ANALYSIS OF MAGNETO-RHEOLOGICAL DAMPER [Paper ID: 82] Ashwani Kumar, S. K. Mangal

EFFECT OF REINFORCEMENT ON THE PERFORMANCE OF PLASMA SPRAYED HYDROXYAPATITE COATINGS: A REVIEW [Paper ID: 52]

Vikas Rattan, T.S. Sidhu, Manoj Mittal

WELD CHARACTERISTICS OF M250 GRADE MARAGING STEEL IN AEROSPACE INDUSTRY [Paper ID: 35]

S Sundaresan, Goutam Nayak, AP Beena, CK Krishnadasan, B Nageswara Rao

EFFECT OF "U" SHAPED AND DOME SHAPED BAFFLES ON DAMPING FOR SLOSH SUPRESSION [Paper ID: 24]

R. Mothilal, S. Rajendran, T. Sundararajan

HOT CORROSION BEHAVIOR OF SUPERALLOY IN THE INCINERATOR ENVIRONMENT

[Paper ID: 129]

Harminder Singh

EFFECTS OF THERMAL CONDITIONS ON THE SURFACE MORPHOLOGY OF NaNO $_2$: PVA COMPOSITE FILMS [Paper ID: 121]

Lakhbir Singh, Baljinder Kaur, Navneet Dabra, Jasbir S. Hundal

INFLUENCE OF TOOL SHAPE, TOOL ROTATIONAL SPEED & WELDING SPEED ON MECHANICAL AND MICROSTRUCTURAL PROPERTIES OF DISSIMILAR FRICTION STIR WELDED AA5083 & AA6082 ALUMINUM ALLOYS [Paper ID: 71]

Chetan Aneja, Amit Handa

SIMULATION OF DYNAMIC PERFORMANCE-RELIABILITY FOR INDIGENOUSLY DEVELOPED 3-DOF MANIPULATOR [Paper ID: 68]

Amitabh Kumar, Arshad Javed

TECHNICAL SESSION (C2)

DR. HARMINDER SINGH BAINS (CHAIRMAN)

17TH OCTOBER, 2014

1230-1430 Hrs.

A REVIEW ON THE ADVANCEMENT OF PIEZOELECTRIC COMPOSITE ACTUATORS [Paper ID: 57]

K. Venkata Rao, S. Raja, T. Munikenche Gowda

FEM MODELING AND MULTI-OBJECTIVE OPTIMIZATION OF ELECTRO-DISCHARGE MICROMACHINING OF AISI 4140 STEEL [Paper ID: 60]

Ajay Suryavanshi, Vinod Yadava, Audhesh Narayan

STUDY OF PERFORMANCE ANALYSIS OF SOLAR AIR HEATER WITH DIFFERENT ARTIFICIAL ROUGHNESS [Paper ID: 56]

Anup Kumar, Apurba Layek

EVALUATION OF STRUCTURAL AND MECHANICAL PROPERTIES OF TIG WELDED ALUMINIUM ALLOY AA-5083 SUBJECTED TO POST CRYOGENIC TREATMENT [Paper ID: 49] Sachin L.S, Mayur S., Pavan K.M., Chandrashekar A., B.S. Ajaykumar

LATERAL VIBRATIONEVALUATION OF A HIGH SPEED ROTOR-BEARING SYSTEM USING FINITE ELEMENT METHOD [Paper ID: 124]

Mohammad Hadi Jalali, Mostafa Ghayour, Saeed Ziaei-Rad, Behrooz Shahriari

MAGNETORHEOLOGICAL FLUID AND GREASE BASED SQUEEZE FILM DAMPERS – A COMPARISON [Paper ID: 79]

L. Ravikumar, G. Saravana Kumar, H. P. Jagadish, Denesh Na.

EFFECT OF L/D RATIO AND THE TEMPERATURE ON MR FLUID SQUEEZE FILM DAMPER PERFORMANCE [Paper ID: 75]

G. Saravanakumar, L. Ravikumar

ANALYSIS VARIOUS PARAMETERS BETWEEN CNC LATHE TURNING AND SWANSOFT CNC SIMULATOR [Paper ID: 119]

Surinder Pal, Rahul Kapoor

TECHNICAL SESSION (A3)

DR. RAHUL CHIBBER (CHAIRMAN)

17TH OCTOBER, 2014

1530-1730 Hrs.

STUDIES OF D-GUN SPRAYED Cr₃C₂+25NiCr COATING ON TURBINE STEEL IN A SIMULATED EROSIVE ENVIRONMENT AT 30⁰ AND 90⁰ IMPACT ANGLES [Paper ID: 70]
S. Kaushal, G. Kaushal

'STEP' BASED CIM SYSTEM: A PRE-REQUISITE FOR SUSTAINABLE MANUFACTURING BUSINESS [Paper ID: 106]

Joginder Singh Kaler, Manoj Kumar

PERFORMANCE INVESTIGATION OF TOPOLOGICALLY OPTIMIZED MANIPULATOR LINK [Paper ID: 111]

Aditya Kulkarni, Arshad Javed

ANALYSIS OF EN-31 SURFACE CHARACTERISTICS PRODUCED BY CRYOGENIC TREATED EDM ELECTRODES [Paper ID: 41]

Amandeep Singh, Neel kanth Grover, Rakesh Kumar

ANALYSIS OF SURFACE ROUGHNESS IN HIGH SPEED BALL END MILLING [Paper ID: 28] Mithilesh Kumar Dikshit, Asit Baran Puri, Atanu Maity, S Y Pujar

INTELLIGENT LIGHTING SYSTEM FOR COLLEGE CLASSROOM [Paper ID: 117]

Mohit Kumar, Milind Mathapati, Rahul Patil, Arshad Javed

INVESTIGATION ON THE PERFORMANCE OF CI ENGINE WITH BLENDS OF COTTON SEED AND HONGE BIO-DIESEL [Paper ID: 135]

K V Suresh, Shankarappa Kalgudi, Peter Fernandes, Raju K

EXPERIMENTAL VALIDATION OF SIMULATED RESULTS THROUGH DIFFERENT NOZZLES FOR EFFECTIVE COOLING IN CYLINDRICAL GRINDING PROCESS TO ENHANCE WORKPIECE SURFACE QUALITY [Paper ID: 48]

Mandeep Singh, Yadwinderpal Sharma, Jaskarn Singh

TECHNICAL SESSION (B3)

Dr. HAZOOR SINGH (CHAIRMAN)

17TH OCTOBER, 2014

1530-1730 Hrs.

EFFECT OF WELDING PARAMETERS ON THE PROPERTIES OF ALUMINIUM ALLOYS 6063 AND 6101 WELDED WITH FRICTION STIR WELDING [Paper ID: 138] Yadwinder Pal Sharma, Pardeep Kumar

STRUCTURAL HEALTH MONITORING OF COMPOSITES FOR AIRCRAFT STRUCTURES [Paper ID: 122]
Raju

MATERIALS SELECTION FOR DYNAMIC RESPONSE OF BAJAJ PULSAR 150CC CONNECTING ROD USING ANSYS-14.0 [Paper ID: 44]

Amit Kumar, Bhingole P.P., Dinesh Kumar

FRICTION AND WEAR CHARACTERISTICS OF INDEGENOUS 'EPDM' RUBBER UNDER DRY SLIDING CONDITION [Paper ID: 63]
Abhijit Mukhopadhyay

A SYSTEM FOR COMPUTER-AIDED GATING DESIGN FOR SINGLE AND MULTI-CAVITY INJECTION MOULDS [Paper ID: 130]

Vijay Kumar, Roshan Lal Virdi

INFLUENCE OF TOOL-PIN PROFILE ON PROPERTIES OF FRICTION STIR PROCESSED AA 2014 UNDER NATURAL AND FLOOD COOLING [Paper ID: 133]

Gagandeep Singh Dhaliwal, Pardeep Kumar

STUDIES OF THE WEAR DAMAGE AND WEAR MODE TRANSITION IN STIR CAST LM13 ALLOY-RUTILE COMPOSITES [Paper ID: 159]

Rama Arora, Anju Sharma, Suresh Kumar, Gurmel Singh, O.P. Pandey

TRIBOLOGICAL PROPERTIES OF STIR CAST NATURAL MINERAL GARNET REINFORCED AI COMPOSITE AT ELEVATEDTEMPERATURES (Paper ID: 164)

Anju Sharma, Rama Arora, Suresh Kumar, Gurmel Singh, O.P. Pandey

TECHNICAL SESSION (C3)

DR. HARPREET SINGH (CHAIRMAN)

17TH OCTOBER, 2014

1530-1730 Hrs.

STUDY ON POROSITY OF PLASMA SPRAYED CARBON NANO TUBE REINFORCED COMPOSITE COATINGS

Rakesh Goyal, Vikas Chawla, Buta Singh Sidhu

ELIMINATION OF HYDROGEN INDUCED CRACKS BY SLOW COOLING AFTER HOT ROLLING OF MEDIUM CARBON MOLYBDENUM STEEL BLOOMS

D. Ravichandar, K.B. Nagashanmugam, T. Balusamy

DEVELOPMENT AND EVALUATION OF MECHANICAL PROPERTIES OF ALUMINIUM BASED ALLOY WITH ADDITION OF 4% ALUMINA (Al2O3)

H. Singh, G. Kaushal, H. S. Sidhu

18TH OCTOBER, 2014

PLANERY SESSION

DR. CHRIS BERNDT (CHAIRMAN)

18TH **OCTOBER**, **2014**

0900-1100 Hrs.

- 1. COLD SPRAY PROCESSING OF EXOTIC MATERIALS

 JEGANATHAN KARTHIKEYAN, ASB Industries, Inc, 1031 Lambert Street, Barberton, OH 44203.
- 2. GLASS METAL JOINTS FOR SOLAR THERMAL APPLICATION: ASSOCIATED FABRICATION PROBLEMS AND STRUCTURAL INTEGRITY ISSUES
 [Paper ID: 149] 0930 Hrs.
 RAHUL CHHIBBER, Astt. Professor, IIT Rajasthan, Jodhpur
- 3. MACHINABILITY OF OPTIMISED AL/5,10,15 VOL% AL₂O₃P-MMC PRODUCED BY LOW STIR CASTING TECHNIOUE 1000 Hrs

HARMINDER SINGH BAINS, DIRECTOR, Panjab University SSG Regional Centre, Hoshiarpur, Punjab

POSTER PRESENTATION SESSION (D1)

16[™] OCTOBER, 2014

EXPERIMENTAL STUDY OF PALM METHYL ESTER BLENDED BIO-DIESEL WITH FUEL ADDITIVE ON PERFORMANCE AND EMISSION CHARACTERIISTICS OF A 3.3 LITRE NATURALLY ASPIRATED DIESEL ENGINE

Siddarth Manoharan, Sivakumar Gopal, S.Senthil kumar

CARBON DIOXIDE ASSISTED PRODUCTION OF ALGINATE MICROPARTICLES FOR GLUTATHIONE ADMINISTRATION

Milos Beran , Josef Drahorad , Marian Urban , Petr Molik , Lubomir Adamek , Frantisek Toman , Robert Hromadka , Viera Sandrikova

STUDY ON HARDFACING TECHNIQUES- A REVIEW

Lakhwinder Singh, Avtar Singh

NUMBER RECOGINITION USING ARTIFICIAL NEURAL NETWORK

Amritpal Kaur Dult

HEAT TRANSFER IN THREE DIMENSIONAL FLOWS THROUGH A POROUS MEDIUM WITH PERIODIC PERMEABILITY

Harsimran Kaur, G.N. Verma

AN EXPERIMENTAL INVESTIGATION OF SUPERPLASTIC FORMING IN ALUMINUM SHEET METAL

Ratna Deepak Puli, P Karthikeyan

THE KINETICS OF DYANAMIC RECRYSTALLIZATION OF A LOW CARBON Nb-V-Ti MICROALLOYED STEEL

Sumit Ghosh, Suhrit Mula

COMPARISION BETWEEN THE SYNTHESIS OF CDO NANOPARTICLES WITH THE HELP OF UREA AND GLYCENE AS A FUEL USING SELF- PROPOGATION COMBUSTION METHOD Puneet Kaur, Kanchan L. Singh, Gurjinder Kaur

EFFECT OF LUBRICATION ON TRIBOLOGICAL PROPERTIES OF MARTENSITIC STAINLESS STEELS

Vipin Goyal, Manoj Kumar

EXPERIMENTAL INVESTIGATION ON TRANSVERSE SHRINKAGE STRESS AND DISTORTION OF EXTRA NARROW AND CONVENTIONAL GAP DISSIMILAR BUTT JOINT OF AUSTENITIC STAINLESS STEEL TO LOW ALLOY STEEL

Ramkishor Anant, P.K.Ghosh

POSTER PRESENTATION SESSION (D2)

17[™] OCTOBER, 2014

AN EVALUATION OF THE WEAR BEHAVIOUR OF HARDFACED PLOUGH SHARES SUBJECTED TO SOIL ABRASION

Parvinkal Singh Mann, Sukhpal Singh Chatha

EFFECT OF SIC ABRASIVE ON FINISHING OF ALUMINIUM PIPES BY MAGNETIC ABRASIVE MACHINING PROCESS

Amrinder Sidhu, Gagandeep Kaushal, Hazoor Singh

THE BOROSILICATE GLASSES CONTAINING HEAVY METAL OXIDES – AS RADIATION SHIELDS Bal Krishan, Gurmel Singh Mudahar

COMPARATIVE STUDIES OF SOLAR/UV IRRADIATION ON DEGRADATION OF REACTIVE BLUE

STUDIES ON MOLAR EXTINCTION COEFFICIENTS OF SOME CONCRETE MATERIALS Bal Krishan, Gurmel Singh Mudahar

MAGNETIC BEHAVIOUR OF ISOMERIC COPPER(II) COMPLEXES Anju Saini , Raj Pal Sharma , Paloth Venugopalan , Valeria Ferretti

TWO RARE ZIGZAG COPPER(II) COORDINATION POLYMERS

Anju Saini , Raj Pal Sharma , Paloth Venugopalan , Valeria Ferretti

USING NANOPHOTOCATALYST Preeti Bansal, Dhiraj Sud