

SPPM2018

1-3 March 2018, BUET, Dhaka

Programme Summary

01 March 2018; Thursday		
03:00 am – 06:00 pm	EARLY REGISTRATION Venue: Professor Ibrahim Library, Department of MME	
02 March 2018; Friday		
09:00 am – 10:00 am	LATE REGISTRATION Venue: Council Bhabhan, BUET	
10:00 am – 11:00 am	INAUGURAL CEREMONY Venue: Council Bhabhan, BUET	
11:00 am – 11:30 am	Tea / Coffee Break	
11:30 am – 12:15pm	PLENARY SESSION 1 Venue: Council Bhabhan, BUET	
12:15 pm – 02:30 pm	Prayer / Lunch Break	
02:30 pm – 04:00 pm	TECHNICAL SESSION 1A: <u>Nanomaterials & Thin Films 1</u> Venue: Seminar Room, DMME	TECHNICAL SESSION 1B: <u>Polymers & Composites 1</u> Venue: PI Library, DMME
04:00 pm – 04:30 pm	Tea / Coffee Break	
04:30 pm – 06:00 pm	TECHNICAL SESSION 2A: <u>Processing, Fabrication & Properties</u> Venue: Seminar Room, DMME	TECHNICAL SESSION 2B: <u>Ceramic & Biomaterials</u> Venue: PI Library, DMME
03 March 2018; Saturday		
09:30 am – 10:45 am	PLENARY SESSION 2 Venue: Seminar Room, Department of MME	
10:45 am – 11:00 am	Tea / Coffee Break	
11:00 am – 12:30 pm	TECHNICAL SESSION 3A: <u>Fatigue, Fracture & Performance</u> Venue: Seminar Room, DMME	TECHNICAL SESSION 3B: <u>Polymers & Composites 2</u> Venue: PI Library, DMME
12:30 pm – 01:00 pm	POSTER SESSION Venue: Department of MME	
01:00 pm – 02:30 pm	Prayer / Lunch Break	
02:30 pm – 04:30 pm	TECHNICAL SESSION 4A: <u>Nano-materials & Thin Films 2</u> Venue: Seminar Room, DMME	TECHNICAL SESSION 4B: <u>Miscellaneous</u> Venue: PI Library, DMME
04:30 pm – 05:00 pm	Tea / Coffee Break	
05:00 pm – 05:30 pm	CONCLUDING SESSION Venue: Seminar Room, DMME	

Technical Session Details

Plenary Session 1

02 March 2018, Friday, 11:30 am – 12:15 pm, Council Bhabhan, BUET

Chair: Prof. Dr. A. S. M. A. Haseeb, University of Malaya, Malaysia

[A01]

Full-Scale Fire Testing of CFRP-Strengthened Reinforced Concrete Column

Sobia Anwar Qazi, Hamidah Mohd. Saman, Azmi Ibrahim, Mahmood Tahir, Shek Poi Ngian

Technical Session 1A – Nanomaterials and Thin Film 1

02 March 2018, Friday, 02:30 pm – 04:00 pm, Seminar Room, Department of MME

Chair: Dr. Mohammed Abdul Basith, Asso. Prof., Department of Physics, BUET

[K03]

Bi_{0.9}Ho_{0.1}FeO₃/TiO₂ Composite Thin Films: Synthesis and Study of Structural and Optical Properties

Md. Rafiqul Islam, M. A. Zubair, M. S. Bashar and A. K. M. B. Rashid

[K20]

Effect of Activation Site Density on Copper Encapsulation of MWCNTs by Electroless Deposition

Md Muktadir Billah and Dr. Quanfang Chen

[K10]

Fabrication of Silver Nanoparticles Decorated Graphene-Magnetic Carbon Nanotube with High Catalytic Efficacy

Md. Ferdous, Md. Rafiqul Islam and Md. Shafiul Azam

[K14]

Synthesis and Characterization of Boron Doped Bismuth Oxide Thin Films via a Simple Chemical Route for Fuel Cell Applications

B. C. Dev, M. H. Babu and J. Podder

[K15]

Study of Structural and Optical Properties of Spray Deposited Undoped and Zinc (Zn) Doped Bismuth Oxide Thin Films

F. Basharat, J. Podder and Ishtiaque M. Syed

[K05]

Effect of Process Variables on Deposited Copper Oxide Thin Film by Sol-gel Spin Coating Technique

Dipika Rani Bhowmik, Aninda Nafis Ahmed, M. A. Gafur, Muhammed Yusuf Miah and Dipa Islam

[K16]

Electroless Deposition of p-type Cuprous Oxide Thin Film for Solar Application

Asif Mahmud, Shadman Sharar Mahmud and Md. Moniruzzaman

Technical Session 1B – Polymers and Composites 1

02 March 2018, Friday, 02:30 pm – 04:00 pm, Professor Ibrahim Library, Department of MME

Chair: Dr. Mubarak Ahmad Khan, Previous DG, AERE, Savar

[G23]

Synthesis and Characterization of Reduced Graphene Oxide (rGO) Reinforced Polymer Matrix Composite

V. C. Saha, M. Alam, P. Shams, S. Rahman, M. R. Qadir, M. R. Islam and F. Gulshan

[G01]

Post-stress Induced Tensile Property Modification of Jute Polymer Composite

M. K. Nahian, S. Z. Ali and M. A. Islam

[G24]

Fabrication and Characterization of Sugarcane Bagasse Reinforced Polypropylene (PP) Composites

Mohammad B. Hoque, Asiqun Nobil, Anich Mia, Mamun Hossain, Md. Sabbir Azam, Abu H. M. Kamal, Md. Razzak, Muhammad B. Uddin and Ruhul A. Khan

[G04]

Effect of Fiber Ratio and Chemical Treatment on Properties of Banana and Betel Nut Fiber Reinforced Hybrid Polypropylene Composites

B. Sutradhar, M. B. Mesbah and M. Hasan

[G02]

Flexural Property Enhancement of Jute Polyester Composite

S. Z. Ali, M. K. Nahian and M. A. Islam

[G08]

Effect of Age of Bamboo Fibers on Mechanical Properties of Bamboo Fiber Reinforced Composites: An Experimental Investigation.

Md. Kharshiduzzaman, Raju Ahmed, Abul Kalam Azad and Aminul Ahasan

[G21]

Mechanical Properties of Silk and Glass Fiber Reinforced Hybrid Polypropylene Composites

Md. R. H. Mazumder, F. Numera, A. Al-Asif and M. Hasan

Technical Session 2A – Processing, Fabrication and Properties

02 March 2018, Friday, 04:30 pm – 06:00 pm, Seminar Room, Department of MME

Chair: Dr. Md. Abdul Gafur, Principal Scientific Officer, IFRD, BCSIR, Dhaka

[B03]

Effects of Ca Addition on Microstructure and Hot Deformation of AZ61 Magnesium Alloy

I. A. F. Rabbi, M. M. A. Shawon and H. M. M. A. Rashed

[B05]

Study of Electromigration Failure of Indium-Silver Alloy

S. A. Chowdhury, K. M. Shorowordi and M. A. Matin

[B07]

Effect of Mg₂Sn Particles on Microstructure and Mechanical Properties of Aged AZ Series Magnesium Alloy

M. E. Hossain, H. M. M. A. Rashed and M. A. Zubair

[C12]

Thermal Modification of Ni Content Al-Si-Cu Automobile Engine Block Alloys

A. Hossain, F. Gulshan and A. S. W. Kurny

[C01]

Effect of Copper/Magnesium Ratio on Mechanical Properties of an AA7xxx Aluminium Alloy

Md. Jasim Uddin and H. M. M. A. Rashed

[C03]

Development of a High Strength Al-Mg₂Si-Mg-Zn Based Alloy

Mahbuba Akhter Liza and A. K.M. B. Rashid

[C02]

Effect of Cu on Mechanical Properties of an Al-Si Alloy

E. A. Ashrafi, A. Hasan and H. M. M. A. Rashed

[C19]

Synthesis and Micro Hardness Properties of Ball Milled rGO Reinforced Aluminium Matrix Composite

P. Shams, S. Rahman, V. C. Saha, M. Alam, S. Ahmed, Md. Hasanuzzaman and F. Gulshan

[L03]

Property Test of Micro-Concrete Reinforced with GI Wire and Polymer Fiber

Aditi Saha

Technical Session 2B – Ceramics and Biomaterials

02 March 2018, Friday, 04:30 am – 06:00 pm, Professor Ibrahim Library, Department of MME

Chair: Dr. Md. Fakhru Islam, Professor, Department of Glass and Ceramic Engineering, BUET

[I01]

Theoretical and Experimental Evidence of Modified Structure, Magnetism and Optical Properties in Ba and Mn Co-Substituted BiFeO₃

Tilottoma Saha, Fabia Farlin Athena, M. A. Matin and Ahmed Sharif

[I02]

Study of the Structural and Magnetic Properties of Li Substituted Cu-Mn Mixed Ferrites

M. A. M. Quraishi, M. S. Ullah and A. K. M. Akther Hossain

[I03]

Effect of Sr and Mn Co-doping on Multiferroic Properties of BiFeO₃ via Sol-gel Chemical Process

Sumaiya Jannat, Md. Rafiqul Islam, M. A. Matin and Ahmed Sharif

[J01]

A Comparative Analysis of Conventional Biomaterials as Bone Substitutes for Frontal Human Skull

M. M. Billah, A. Mazumder and A. Bhattacharjee

[I04]

Processing of Ultralight Porous Al₂O₃-Ceramics by Biotemplating of Bamboo

M. A. Rahman and K. M. Shorowordi

[L04]

Utilization of Hard Rock Dust in Ceramic Glaze Formulation

Mst. Shanjida Sultana, Aninda Nafis Ahmed, Mohammad Nazim Zaman, Md. Aminur Rahman

[H05]

Review Paper on Investigation of a Possibility of Electronic Battery

Azrin Akhter Chowdhury

[I05]

Effects of Gd and Cr Co-doping on Multiferroic Properties of $\text{Bi}_{0.9}\text{Gd}_{0.1}\text{Fe}_{(1-x)}\text{Cr}_x\text{O}_3$ ($x=0-0.08$)

M. N. Hossain, M. A. Matin, M. A. Hakim, M. F. Islam

[I06]

Effects of CoFe_2O_4 Substitution on Magnetic Properties of NiFe_2O_4 Spinel Ferrite

S. A. Ali, M. A. Matin, M. A. Hakim, M. F. Islam

Plenary Session 2

03 March 2018, Saturday, 09:30 am – 10:45 pm, Seminar Room, Department of MME

Chair: Prof. Dr. Hamidah Mohd. Saman, Universiti Teknologi MARA, Malaysia

[A02]

Multi-Scaled Heterogeneities in Microstructures and Deformation Behaviour in Steels

Y. Tomota

[A03]

Reactive Nanoparticle Doped Flux for High Reliability Electronic Micro-Joints

A. S. M. A. Haseeb, M. Nasir Bashir, G. K. Sujjan

Technical Session 3A – Fatigue, Fracture, and Performance

03 March 2018, Saturday, 11:00 am – 12:30 pm, Seminar Room, Department of MME

Chair: Dr. Md. Mohar Ali, Previous Professor, Department of MME, BUET

[B06]

Fatigue Properties of Overaged Cast Aluminium-7Silicon-0.3Magnesium Alloy

R. Islam, A. Rahman and A. K. M. B. Rashid

[C11]

Effect of Boron Addition on the Wear Properties of As-Cast AZ91 Magnesium Alloy

N. Akram, K. M. Shorowordi, S. Roy and A. Mahmud

[D05]

Fatigue Life Dependency on the Cleanliness and Ductility of Structural Steels

M. A. Islam, R. A. Mizan and M. A. S. R. Saadi

[F02]

Finite Element Analysis of an Aluminum Alloy Using Progressive Failure Algorithm

M. F. Hossain, K. M. Shorowordi and M. S. Islam

[F04]

Stress, Deformation and Failure Analysis of Parabolic Leaf Spring by Finite Element Analysis with Material Optimization

Tasmeen Inteeser Khan, M. I. Washif Rahman Omi, Md. Jubayer Hossain, Md. Merajul Haque and Fazlar Rahman

[F05]

Investigation of Elastic Properties of Fiber-Reinforced Composites by Micromechanical Modeling Method
Anik Das Anto, Sobahan Mia, Md Abdul Hasib, Mahedy Hasan and Tazdiqul Alam Chowdhury

[F07]

Studies the Tensile Fracture at Various Strain Rates and Impact Fracture Behaviour of Heat Treated Cu Content Al-Si-Ni Alloys
A. Hossain, F. Gulshan and A. S. W. Kurny

Technical Session 3B – Polymers and Composites 2

03 March 2018, Saturday, 11:00 am – 12:30 pm, Professor Ibrahim Library, Department of MME

Chair: Dr. Md. Nasrul Haque, Professor, Department of MME, BUET

[G03]

Effect of Fiber Content and Post Stress on Moisture Absorption of Jute Polyester Composite
S. Z. Ali, M. K. Nahian and M. A. Islam

[G06]

Mechanical Properties of Chemically Treated Coir and Betel Nut Fiber Reinforced Hybrid Polypropylene Composites
M. M. Rahman, M. Mondol and M. Hasan

[G07]

Thermal Conductivity Enhancement of Polypropylene Based Composites Filled by Organic and Inorganic Particles
R. A. Mizan and M. A. Islam

[G09]

Mechanical, Thermal and Morphological Properties of Pineapple and Betel Nut Husk Fiber Reinforced Hybrid Polypropylene Composites
M. Akter, E. Jahan and M. Hasan

[G16]

Physico-Mechanical Properties of Pineapple Leaf and Banana Fiber Reinforced Hybrid Polypropylene Composites: Effect of Fiber Ratio and Sodium Hydroxide Treatment
Sangita Das, Maliha Rahman and Mahbub Hasan

[G18]

Mechanical, Morphological and Thermal Properties of Alkali Treated Ladies Finger Fiber Reinforced Polypropylene Composites
Md. I. Hossain and M. Hasan

[G22]

Properties of Jute and Sheep Wool Fiber Reinforced Hybrid Polypropylene Composites
J. Tusnim, N. S. Jenifar and M. Hasan

Technical Session 4A – Nanomaterials and Thin Film 2

03 March 2018, Saturday, 02:30 pm – 04:30 pm, Seminar Room, Department of MME

Chair: Dr. Engr. Sheikh Manjura Hoque, Chief Scientific Officer & Head, Materials Science Division, AEC, Dhaka

[K07]

Effect of Cu Doping on Morphological, Structural, Optical and Electrical Properties of MnO₂ Thin Films Deposited by Spray Pyrolysis Method

M. Zahan, M. Sharmin and J. Podder

[K04]

Synthesis and Characterization of Ba²⁺, La³⁺ and Zr⁴⁺ Co-Modified Multiferroic BiFeO₃ Nanoparticles

Fahim Khan, Sudipta Mondal, Hasan Muhammad Usama and Ahmed Sharif

[K02]

Size Dependent Magnetic and Optical Properties of Mn Doped Bi_{0.9}Ho_{0.1}FeO₃ Nanoparticles

Fabia Farlin Athena, Md. Rafiqul Islam, Tilottoma Shaha and Ahmed Sharif

[K12]

Structural and Optical Properties of Undoped and Zinc Doped Titanium Dioxide Thin Films by Spray Pyrolysis Technique

F. Anjum, M. S. Ullah, J. Podder, M. A. Matin, M. Shahjahan and M. M. Rahman

[K13]

Effect of Fe Doping on the Surface Morphological, Structural, Optical and Electrical Properties of Nano-Crystalline SnO₂ Thin Films Deposited by Thermal Spray Pyrolysis

M. H. Babu, J. Podder, B. C. Dev and M. A. Zubair

[K18]

Al- and Al-Ca-doped ZnO Thin Films by Sol-Gel Method for Solar Cell Application

Shubhrodev Bhowmik, Md. Ibrahim Raiyan and Md Moniruzzaman

[K11]

Effect of Concentration of Precursor Solution on Surface Morphology and Optical Properties of Titania Thin Film

N. Barua, J. F. Moushumi and A. K. M. B. Rashid

[L10]

Binding and Release of Ciporofloxacin Hydrochloride on Nanocrystalline Cellulose and its Modified Nanocrystalline Form

Mohammad Motiur Rahman, Khalide Hasan Parvej, M Mozammel Hosen and Shakhawat H. Firoz

[L05]

Fabrication of Biodegradable Graphene Oxide Based 2D-crosslinked Polylactic Acid (PLA) with Enhanced Mechanical Strength and Thermal Stability

Majharul Islam Sujan and Md. Shafiul Azam

[J02]

In- vitro Anthelmintic activity of Zinc Oxide nanoparticles against Pheretima Posthuma

Faruk Hosain, Abdullah-Al-Ragib, Md. Shafiul Islam and H. B. M. Zukaul Islam

Technical Session 4B – Miscellaneous

03 March 2018, Saturday, 02:30 pm – 04:30 pm, Professor Ibrahim Library, Department of MME

Chair: Dr. A. A. Md. Rezaul Haque, Professor, Department of MME, BUET

[L02]

Quantification and Qualification of Silica Sand Extracted from Padma River Sand

A. S. M. M. Rafi, U. F. Tasnim and M. S. Rahman

[L08]

Comparison of Mechanical Properties of Induction Furnace Steel Slag and Electric Arc Furnace Steel Slag as a Replacement of Fine Aggregate in Construction Materials

R. Atahar, R. M. Rezaul, T. B. Tasnim, A. S. W. Kurny, R. Momtaz and F. Gulshan

[L09]

Characterization and Upgradation of Silica Sand of Sylhet

M. H. Tania, A. S. W. Kurny and F. Gulshan

[L11]

Effect of Surface Coating on the Bonding Strength of Reinforcing Steel Bars in Concrete Structures

M. N. Uddin and M. A. Islam

[C07]

Cheap and environment-friendly solar cell by electrodeposition

M. Habib, A. Roy and M. Moniruzzaman

[C17]

Effects of Quality of Coarse Aggregates and Compaction Mode on the Compressive Strength of Concrete

J. Roy and M. A. Islam

[D04]

Microstructural Changes Under Fire in TMT 500W Structural Steel Rebars

M. S. Shahriar, M. R. Nawaz and M. A. Islam

[D01]

Fire Resistance of Locally Produced 500W Structural Steel Bars

M. R. Nawaz, M. S. Shahriar and M. A. Islam

[F03]

Stress Analysis of a Cylinder Subjected to Thermo-mechanical Loads by Using FEM

Somnath Somadder and Md. Shahidul Islam

[F06]

Structural Analysis of a FML Wing based on FE Method

S. B. Rayhan, S. Jian and Y. Chunjin

Poster Session

03 March 2018, Saturday, 12:30 pm – 01:00 pm, Department of MME

[P01]

Fabrication of Jute Fabrics Reinforced Polyethylene Matrix Composites: Effect of Colors

Nasrin A. Kona, Shahirin Shahida, Md. Naimul Islam, Arwah Ahmed, Anich Mia, Mamun Hossain, Abu H. M. Kamal, Md. B. Uddin, Ruhul A. Khan

[P02]

Comparative Studies of Mechanical Properties between Jute fiber and E-glass Fiber-Reinforced Unsaturated Polyester-based Composites

*Mamun Hossain, Arwah Ahmed, Anich Mia, Md. SabbirAzam, Muhammad B. Uddin, Md. Razzak, A. H. M. Kamal, Md. Zahirul I. Mollah, Ruhul A. Khan**

[P03]

Fabrication and Characterization of Heavy Mineral Reinforced Polymer-based Concrete Composite for Gamma Radiation Shielding

Md. Mumminul Haque, Md. Sabbir Azam, M. Shamsuzzaman, Abid Intiaz, Abu Z. M. Salahuddin, Ruhul A. Khan

[P05]

Investigation of Structural, Morphological, Optical and Electrical Properties of Spray Synthesized Fe₂O₃ Thin Films for Optoelectronic Applications

M. Sharmin, M. Zahan, J. Podder

[P08]

Synthesis and Characterization of Hydrogels by Gamma Radiation for Biomedical Applications

Fariha Afrose, Sadia Afroz, Abu H. M. Kamal, Md. Razzak, Mamun Sarkar, Md. Ashrafal Alam and Ruhul A. Khan

[P09]

Mechanical and Spectroscopic Characterization of Polyethylene Oxide/Dimethylacrylamide Based Hydrogels for Wound Healing Applications

Sadia Afroz, Fariha Afrose, Abu H. M. Kamal, Md. Razzak, Muhammed Y. Miah, Md. Ashrafal Alam and Ruhul A. Khan

[P11]

Fabrication and Characterization of Natural and Synthetic Fiber Reinforced Polypropylene-based Composites

Shahirin Shahida, Md. Naimul Islam, Nasrin A. Kona, Anich Mia, Ruhul A. Khan

[P12]

Mechanical Characterization of Electronic-glass Fiber Mat Reinforced Unsaturated Polyester Resin-based Composites

Md. Naimul Islam, Shahirin Shahida, Nasrin A. Kona, Anich Mia, Mamun Hossain, Ruhul A. Khan

[P15]

Mechanical and Interfacial Characterization of Jute Fabrics Reinforced Unsaturated Polyester Resin Composites

Anich Mia, Muhammad B. Uddin, Arwah Ahmed, Mamun Hossain, Md. Razzak, Abu H. M. Kamal, Ruhul A. Khan

Inaugural Ceremony

02 March 2018, Friday Council Bhabhan, BUET 10:00 am – 11:00 am

09:50 am	Guests take their seats
10:00 – 10:05 am	Welcome address by the Conference Secretary Dr. A. K. M. Bazlur Rashid Professor, Department of MME, BUET
10:05 – 10:20 am	Speech by the Special Guest Dr. Gauranga Chandra Mohanta <i>ndc</i> Project Director (Additional Secretary), HEQEP, UGC of Bangladesh
10:20 – 10:35 am	Speech by the Special Guest Prof. Dr. Saiful Islam Vice-Chancellor, BUET
10:35 – 10:50 am	Speech by the Chief Guest Prof. Abdul Mannan Chairman, University Grants Commission of Bangladesh
10:50 – 11:00 am	Vote of thanks by the Chair Dr. Md. Moniruzzaman Professor and Head, Department of MME, BUET
11:00 am	Refreshment

Concluding Ceremony

03 March 2018, Saturday, 05:00 pm – 05:30 pm, Seminar Room, Department of MME

04:55 pm	Guests take their seats
05:00 – 04:05 pm	Welcome address by the Conference Secretary Dr. A. K. M. Bazlur Rashid Professor, Department of MME, BUET
05:05 – 05:10 pm	Best Paper and Best Poster Paper Award Ceremony
05:10 – 05:20 pm	Speech by the Chief Guest Prof. Dr. Ehsanul Haque Previous Member, UGC, Bangladesh and Previous Vice-Chancellor, KUET
05:20 – 05:25 pm	Vote of thanks by the Conference Chair Dr. Md. Moniruzzaman Professor and Head, Department of MME, BUET
05:25 – 05:30 pm	Concluding Remarks by the Conference Secretary Dr. A. K. M. Bazlur Rashid Professor, Department of MME, BUET