



30th SBAOI Annual Meeting &
12th STERMI Annual Meeting and
International Virtual Conference
on
**Biomedical Materials
Innovation**

06th to 09th DECEMBER 2020

PROGRAMME

Organized by
Department of Nanoscience and Technology
Bharathiar University
Coimbatore - 641 046
Tamilnadu, India

DAY-1 (06.12.2020)

Inaugural Function BU & UOM (Host)

6.00 pm
to
6.47 pm

C.P. Sharma Award Announcement
by
Prof. Veena Koul

6.50 pm
to
6.55 pm

Session -1 Regenerative Medicine
Chair - Prof. C.P. Sharma / Co-Chair - Prof. Veena Koul

Cato T. Laurencin
University of Connecticut
USA

C.P. Sharma Award Plenary Lecture
Regenerative engineering biomaterials : Convergence and
grand challenges

7.00 pm
to
8.00 pm

DAY-2 (07.12.2020)

Session – 2 Materials in Medicine
Chair - Prof. Bikramjit Basu / Co-Chair - Prof. N.Rajendran and Prof. Geetha Manivasagam

Raja Sabapathy
Ganga Orthopaedic Res. & Edu. Found.
Tamilnadu, India

Plenary Lecture
Tissue engineering in reconstructive surgery and
what is in the horizon ?

10.00 am
to
10.45 am

Ashok Kumar
IIT - Kanpur
India

Keynote Address
Exosomes functionalised biomaterials: A promising therapeutic
tool for diabetic secondary complications

10.50 am
to
11.20 am

Rajasekaran
Ganga Orthopaedic Res. & Edu. Found.
Tamilnadu, India

Plenary Lecture
The science of metallurgy regarding implants in
orthopaedic surgery

11.25 am
to
12.10 pm

Anna Tampieri
ISTEC-CNR
Italy

Plenary Lecture
Nature inspired smart device for regenerative
medicine and nanomedicine

12.15 pm
to
1.00 pm

Lunch Break

Session - 3 Drug Delivery and Wound Care
Chair - Dr. D.S. Nagesh / Co-Chair - Dr. Neetu Singh, Dr Maya Nandkumar & Dr. Naresh kasuju

Aravind Sinha
CSIR-NML, Jamshedpur
India

Keynote Address
Biomaterials: An ongoing journey from biomimetics to
biodegradable alloys

1.30 pm
to
2.00 pm

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| Venugopal Universiti Malaysia Pahang, Malasiya | Invited Talk Nanofibrous structured porous biomaterials scaffolds to mimic native ECM for regenerative medicine | 2.10 pm to 2.30 pm |
| Annabel Braem KU Leuven Belgium | Keynote Address Anti-infective strategies for next generation dental implants | 2.40 pm to 3.10 pm |
| Prakriti Tayalia IIT - Bombay India | Invited Talk Biomaterial-based bioactive dermal patch for wound healing and platform for cancer immunotherapy | 3.20 pm to 3.40 pm |
| Samir Mitragotri Harvard University USA | Plenary Lecture Cellular hitchhiking for targeted drug delivery | 3.50 pm to 4.35 pm |
| Rohit Srivastava IIT - Bombay India | Keynote Address Affordable healthcare technologies in sensing, drug delivery and therapy | 4.45 pm to 5.15 pm |
| Praveen Raj GEM Obesity & Diabetes Surgery Centre India | Invited Talk Science behind surgical cure for diabetes | 5.20 pm to 5.50 pm |
| Shamik Sen IIT - Bombay India | Invited Talk Targeting the glycocalyx for diabetic wound healing | 5.55 pm to 6.15 pm |
| Maya Nandkumar Sree Chitra Tirunal Inst. Med. Sci. & Tech. Kerala, India | Invited Talk Nanoparticles and vaccine delivery | 6.20 pm to 6.40 pm |
| Lorenzo Moroni Maastricht University Netherlands | Plenary Lecture Biofabrication technologies to control cell fate | 6.45 pm to 7.30 pm |
| Prasad Shastri University of Freiburg Germany | Plenary Lecture 3D-Bioprinting - Challenges and the Future | 7.40 pm to 8.25 pm |

Session -4 Nanobiotechnology in Healthcare

Chair - Prof. Biman B Mandal / Co-Chair - Dr. Gnanamani and Dr. Deepa P. Nambiar

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| <p>Tejal Desai University of California USA</p> | <p>Plenary Lecture Therapeutic biomaterials: engineering material “Structure” to modulate biologic delivery</p> | <p>9.00 am to 9.45 am</p> |
| <p>B.D. Malhotra Delhi Technological University India</p> | <p>Keynote Address Nanostructured metal oxides-enabled biosensors for oral cancer detection</p> | <p>9.55 am to 10.25 am</p> |
| <p>Padmanabhan Nanyang Technological University Malasiya</p> | <p>Keynote Address Nano-technological approach for the early detection of Alzheimer's disease</p> | <p>10.35 am to 11.05 am</p> |
| <p>Atsushi Suzuki Yokohama National University Japan</p> | <p>Plenary Lecture Recent advances in gelation techniques of PVA gels for medical applications</p> | <p>11.15 am to 12.00 noon</p> |
| <p>Yashveer Singh IIT - Ropar India</p> | <p>Invited Talk Diphenylalanine-based self-assembled peptide gels for biomaterial-associated infections</p> | <p>12.05 pm to 12.25 pm</p> |
| <p>Arulselvan Royal Care Super Speciality Hospital India</p> | <p>Keynote Address Brain & Nanotechnology</p> | <p>12.30 pm to 1.00 pm</p> |

Lunch Break

Session-5 Bioactive Ceramics and Glasses

Chair - Dr. H.K. Varma / Co-Chair - Dr.T.M. Sridhar and Dr. Sasikumar

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| <p>Ashutosh Kumar Dubey IIT (BHU), Varanasi India</p> | <p>Invited Talk Piezobiomaterials: New generation prosthetic orthopedic implants</p> | <p>1.30 pm to 1.50 pm</p> |
| <p>Artemis Stamboulis University of Birmingham UK</p> | <p>Keynote Address Antimicrobial methodology for orthopaedic applications</p> | <p>2.00 pm to 2.30 pm</p> |
| <p>Aldo R. Boccaccini Univ. of Erlangen-Nuremberg Germany</p> | <p>Plenary Lecture Bioactive glasses and biofabrication in tissue engineering: Achievements and new developments</p> | <p>2.40 pm to 3.25 pm</p> |

Rupak Dua

Hampton University
USA

Invited Talk

Novel approaches to develop and evaluate biomimetics surfaces on orthopedic implants to provide inherent anti-bacterial and enhanced osseointegration properties

3.35 pm
to
3.55 pm

Pamela Habibovic

Maastricht University
Netherlands

Plenary Lecture

Applying novel design- and screening tools to advance the field of organ and tissue regeneration

4.05 pm
to
4.50 pm

SBAOI-MAHE YOUNG SCIENTIST AWARD CONTEST

5.00 pm
to
6.00 pm

Session-6 Biomedical Implants in Healthcare

Chair - Prof. Dhirendra S. Katti / Co-Chair - Dr.A.M.Ballamurugan and Dr. S.Kannan

Jayakumar

Amrita Vishwa Vidyapeetham
Kerala, India

Invited Talk

Vasoconstrictor and coagulation activator incorporated chitosan hydrogel for rapid and effective hemostasis

6.05 pm
to
6.25 pm

Suresh S. Pillai

Baby Memorial Hospital
India

Invited Talk

Evolution and present status of implants in spine surgery

6.30 pm
to
6.50 pm

Subrata Saha

University of Washington
USA

Keynote Address

Ethical challenges in biomaterials research & practice

7.00 pm
to
7.30 pm

Khalil El Mabrouk

Euromed University
Morocco

Invited Talk

3D metallic porous structure coated with bioactive glass for orthopaedic application

7.40 pm
to
8.00 pm

SBAOI-AGM Meeting

8.00 pm

Day-4 (09.12.2020)

Session-7 Regenerative approaches in Healthcare

Chair - Dr.Santanu Dhara / Co-Chair - Dr. Kanagaraj and Dr. Kavitha

Ravi Selvaganapathy

McMaster University
Canada

Keynote Address

Biofabrication techniques for tissue engineering and cultivated meat

9.30 am
to
10.00 am

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| Kaushik Chatterjee IISc, Bangalore India | Invited Talk Nanoscale surface engineering of metallic biomaterials for orthopedic applications | 10.05 am to 10.25 am |
| Nathaniel S. Hwang Seoul National University South Korea | Keynote Address Injectable and anti-inflammatory hydrogel for tissue repair | 10.35 am to 11.05 am |
| Abhijit Chakraborty Guru Nanak Institute of Dental Sc. & Res. India | Invited Talk Journey of nanobioceramics in functional and aesthetic dentistry | 11.15 am to 11.35 am |
| Harikrishna Varma Sree Chitra Tirunal Insti. Med. Sc. and Tech. Kerala, India | Keynote Address In search of ideal biomaterials | 11.40 am to 12.10 pm |
| Subhadip Bodhak CSIR-CGCRI, Kolkata India | Invited Talk Functional biomaterials for spinal reconstruction applications | 12.15 pm to 12.35 pm |
| Anuya Nisal CSIR-NML-Pune India | Invited Talk Comparative studies of silk fibroin and calcium ceramic in bone void filling | 12.40 pm to 1.00 pm |

Lunch Break

Session-8 Additive Manufacturing of Biomaterials & Metallic Implants Chair - Prof. T.S. Sampath Kumar / Co-Chair - Prof. R. Jayakumar and Prof .C. Viswanathan

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| Santanu Dhara IIT - Kharagpur India | Keynote Address Design, development and validation of customized Implants using ethically sourced material | 1.30 pm to 2.00 pm |
| Mauro Petretta Regen HU Switzerland | Invited Talk The 3D bioprinting revolution – expanding the horizons of biomedical science | 2.10 pm to 2.30 pm |
| Joseph Buhagiar University of Malta Malta | Invited Talk A paradigm shift: A low-wearing novel hip joint prosthesis | 2.40 pm to 3.00 pm |
| Bharath Raja Guru Manipal Institute of Technology India | Invited Talk Targeting cancer cells for their over expressed receptors using biodegradable nanoparticles for the therapy | 3.10 pm to 3.30pm |

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| Debrupa Lahiri IIT - Roorkee India | Invited Talk Bioengineered smart trilayer skin tissue substitute for efficient deep wound healing | 3.40 pm to 4.00 pm |
| Sumant Bhutoria Alfatek Systems India | Invited Talk 3D bioprinting - revolutionizing healthcare and medicine | 4.10 pm to 4.30 pm |
| Bala Vaidhyanathan Loughborough University UK | Plenary Lecture Additive manufacturing of nanostructured bioceramic implants | 4.40 pm to 5.25 pm |
| SBAOI-BAJPAI-SAHA STUDENT AWARD CONTEST | | 5.30 pm to 6.30 pm |

Session-9 Organoids and Bio-Engineering
Chair - Prof.N.Ponpandian / Co-Chair - Dr.Ravichandran and Prof.D.Gopi

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| Ipsita Banerjee University of Pittsburgh USA | Keynote Address Bioengineering pancreatic islet organoids from HPSCs for regenerative therapy and disease modeling applications | 6.35 pm to 7.05 pm |
| Francis B. Fernandez Sree Chitra Tirunal Inst. Medical Sci. & Tech. Kerala, India | Invited Talk Engineered bioceramic matrices for sustained active factor delivery | 7.15 pm to 7.35 pm |
| Aline Miller BIOGEL, UK | Invited Talk Tuneable Peptide Hydrogels for 3D cell culture and 3D bioprinting | 7.40 pm to 8.00 pm |
| Valediction & Announcement of Awards [IISc, IIT-D & IIT-G (Host)] | | 8.05 pm to 8.35 pm |

HONARARY CHAIR: PROF. C.P. SHARMA, PROF. VEENA KOUL & PROF. BIKRAMJIT BASU

| DATE | SESSION NO. | SESSION CHAIR DETAILS | | TIME (IST) | |
|------------|---|-----------------------|---|------------|--------|
| | | | | FROM | TO |
| 06.12.2020 | Session – 1 Regenerative Medicine | Chair | Prof. C.P. Sharma | 6.50PM | 8.00PM |
| | | Co-chair | Prof. Veena Koul | | |
| 07.12.2020 | Session-2 Materials in Medicine | Chair | Prof. Bikramjt Basu | 10.00AM | 1.00PM |
| | | Co-chair | Prof. N. Rajendran & Prof. Geetha Manivasagam | | |
| 07.12.2020 | Session-3 Drug Delivery and Wound Care | Chair | Dr. D.S. Nagesh | 1.30PM | 8.25PM |
| | | Co-chair | Dr. Neetu Singh, Dr. Maya Nandkumr & Dr. Naresh Kasuju | | |
| 08.12.2020 | Session-4 Nanobiotechnology in Health Care | Chair | Prof. Biman B. Mandal | 9.00AM | 1.00PM |
| | | Co-chair | Dr.Gnanamani & Dr. Deepa P. Nambiyar | | |
| 08.12.2020 | Session-5 Bioactive Ceramics and Glasses | Chair | Dr. H.K. Varma | 1.30PM | 4.50PM |
| | | Co-chair | Dr. T.M. Sridhar & Dr. Sasikumar | | |
| 08.12.2020 | Session-6 Biomedical Implants in Health Care | Chair | Prof. Dhirendra S. Katti | 6.05PM | 8.00PM |
| | | Co-chair | Dr. A.M. Ballamurugan & Dr. S. Kannan | | |
| 09.12.2020 | Session-7 Regenerative Approaches in Health Care | Chair | Dr. Santanu Dhara | 9.30AM | 1.00PM |
| | | Co-chair | Dr. S. Kanagaraj & Dr. Kavitha | | |
| 09.12.2020 | Session-8 Additive Manufacturing of Biomaterials & Metallic Implants | Chair | Prof. T.S. Sampath Kumar | 1.30PM | 5.25PM |
| | | Co-chair | Prof. R. Jayakumar & Prof. C. Viswanathan | | |
| 09.12.2020 | Session-9 Organoids and Bioengineering | Chair | Prof. N. Ponpandian | 6.35PM | 8.00PM |
| | | Co-chair | Dr. Ravichandran & Prof. D. Gopi | | |



Organized by
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