**Schedule of National Workshop on Fundamentals of Fermentation Process Development**

**Day 1: 13th January 2020**

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| 8:45-9:15 | Registration |  | Main Building Seminar Hall |
| 9:30 – 10:15 | Inaugural ceremony   * Lighting of lamps * Bouquet to guests * Introduction to workshop * Welcome address * Inaugural remarks | Dr. Anirban Roy Choudhury  Senior Principal Scientist, CSIR-IMTECH  Dr. Manoj Raje  Director,  CSIR-IMTECH  Dr. Sanjay Kumar  Director,  CSIR-IHBT, Palampur | Main Building Seminar hall |
| 10:15 – 11:15 | Inaugural Lecture  Mass transfer in bioreactors | Dr. U. C. Banerjee  Professor & Head, Pharmaceutical Technology,  NIPER, Mohali |  |
| 11:15 – 11:30 | Group photograph |  | Imtech DNA garden |
| 11:30 – 12:00 | Tea Break |  |  |
| 12:00 – 13:00 | Fermentation technology shaping the global bioeconomy landscape | Dr. Sanjay Kumar  Director,  CSIR-IHBT, Palampur | Main Building Seminar hall |
| 13:00 – 14:00 | Lunch | | Cafeteria |
| 14:00 - 15:00 | Modelling simulation and optimization of fermentation processes | Dr.A. K. Srivastava  Professor,  Department of Biochemical Engineering and Biotechnology,  IIT-Delhi | MTCC Seminar Hall |
| 15:00 – 15:30 | Tea Break |  |  |
| 15:30 – 17:30 | Lab demonstration: Bioreactor design and optimization | Dr.Anirban Roy Choudhury, Mr. Dinesh, Mr.Jaideep Mehta | BERPDC Fermentation Laboratory |

**Day 2: 14th January 2020**

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| 9:00 – 10:00 | Critical developments in modern bioprocessing | | | Dr.SanjayNene  Chief Executive Officer,  Innovation Biologicals Pvt.Ltd.  Adjunct Professor,  Biochemical Engineering, AICTE | MTCC Seminar hall |
| 10:00 – 10:30 | Tea Break | | |  |  |
| 10:30 – 11:15 | Bio-prospectingof prokaryotic microbial diversity | | | Dr. Suresh Korpole  Principal Scientist,  CSIR-IMTECH | MTCC Seminar hall |
| 11:15 – 12:00 | Strain improvement strategies for large scale cultivation of microbial products | | | Dr. G. Rajamohan  Senior Principal Scientist, CSIR-IMTECH | MTCC Seminar hall |
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| 12:15 – 13:00 | Process development for production of microbial exopolysaccharides: Petri plate to pilot scale | | | Dr. Anirban Roy Choudhury  Senior Principal Scientist, CSIR-IMTECH | MTCC Seminar hall |
| 13:00 – 14:00 | Lunch | | | | Cafeteria |
| 14:00 – 15:30 | Laboratory Demonstration (Session I): Fermenter sterilization (Lab scale and 15/150L fermenter) | | | Dr.Anirban Roy Choudhury, Dr. Mani Shankar Bhattacharya, Mr. Dinesh, Mr. Sandeep, Mr. Prem, Mr. Jaideep Mehta | BERPDC Fermentation Laboratory |
| 15:30 – 16:00 | Tea break | | |  |  |
| 16:00 – 17:30 | Laboratory Demonstration (Session II): Fermenter sterilization (Lab scale and 15/150L fermenter) | | | Dr.Anirban Roy Choudhury, Dr. Mani Shankar Bhattacharya, Mr. Dinesh, Mr. Sandeep, Mr. Prem, Mr. Jaideep Mehta | BERPDC Fermentation Laboratory |

**Day 3: 15th January 2020**

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| 9:00 – 10:00 | Bioconversion & fermentation from the perspective of India’s ambition for sustainable development in the biofuel sector | Dr.SibabrataMukharjee  Industry Technology Specialist,  Novozymes, Bangalore | MTCC Seminar hall |
| 10:00 – 10:45 | Laccase: Potential and limitations | Dr. V. C. Sonawane  Senior Principal Scientist  CSIR-IMTECH | MTCC Seminar hall |
| 10:45 – 11:15 | Tea Break |  |  |
| 11:15 – 12:00 | Downstream processing aspects of industrial fermentation | Dr. Mani S. Bhattacharyya  Senior Scientist,  CSIR-IMTECH | MTCC Seminar hall |
| 12:00 – 13:00 | Nanofiltration coupled fermentation for biofuel production | Dr. G. P. Agarwal  Emeritus Professor,  Department of Biochemical Engineering and Biotechnology,  IIT-Delhi | MTCC Seminar hall |
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| 13:00 – 14:00 | Lunch | | Cafeteria |
| 14:00 – 15:30 | Laboratory Demonstration (Session I): TFF (Microfiltration/  Ultrafiltration) | Dr. Mani S. Bhattacharya, Mr. E. Senthil Prasad, Mr. Jaideep Mehta and Mr. Karan (GE) | BERPDC Fermentation Laboratory |
| 15:30 – 16:00 | Tea Break |  |  |
| 16:00 – 17:30 | Laboratory Demonstration (Session II): TFF (Microfiltration/  Ultrafiltration) | Dr. Mani S. Bhattacharya, Mr. E. Senthil Prasad, Mr. Jaideep Mehta,Mr.Kanojia and Mr. Karan (GE) | BERPDC Fermentation Laboratory |

**Day 4: 16th January 2020**

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| 9:00 – 10:00 | Photobioreactor technology and cultivation strategies of microalgae for biolipid production | Dr.SanjoyGhosh  Professor,  Department of Biotechnology, IIT-Roorkee | MTCC Seminar hall |
| 10:00 – 11:00 | Challenges in biotherapeutic manufacturing: Bridging gaps between R&D and commercial production | Mr. RamitRikhi  Lead-Bioengineering,  Dr. Reddy’s Laboratories | MTCC Seminar hall |
| 11:00 – 11:30 | Tea Break |  |  |
| 11:30 – 12:15 | Post-fermentation processing, chromatographic separation and preliminary identification of secondary metabolites/bioactives | Dr. Hemraj S. Nandanwar  Senior Principal Scientist,  CSIR-IMTECH | MTCC Seminar hall |
| 12:15 – 13:00 | In vitro glycosylation of peptides using bacterial enzymes | Dr. Alka Rao  Principal Scientist,  CSIR-IMTECH | MTCC Seminar hall |
| 13:00 – 14:00 | Lunch | | Cafeteria |
| 14:00 – 15:30 | Laboratory Demonstration (Session I): TLC, HPLC and GC-MS | Dr. Hemraj S. Nandanwarand Mr. Vineet | BERPDC |
| 15:30 – 16:00 | Tea Break |  |  |
| 16:00 – 17:30 | Laboratory Demonstration (Session II): TLC, HPLC and GC-MS | Dr. Hemraj S. Nandanwarand Mr. Vineet | BERPDC |

**Day 5: 17th January 2020**

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| 9:00 – 10:00 | Process development for production of *Escherichia coli* based recombinant proteins | Dr. D. K. Sahoo  Ex-Chief Scientist  CSIR-IMTECH | MTCC Seminar hall |
| 10:00 – 11:00 | Biofuel production from Lignocellulosic biomass: Pre-treatment strategy | Dr.Gunjan Mukherjee  Professor & Head,  University Institute of Biotechnology, Chandigarh University | MTCC Seminar hall |
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| 11:00 – 11:30 | Tea Break |  |  |
| 11:30 – 12:30 | Solid-state fermentation of Apple Pomace for Biotechnological Applications | Dr. R. S. Singh  Professor & Head, Department of Biotechnology,  Punjabi University, Patiala | MTCC Seminar hall |
| 12:30 – 13:00 | Valedictory Session | Dr. Manoj Raje  Director,  CSIR-IMTECH |  |
| 13:00 – 14:00 | Lunch | | Cafeteria |
| 14:00 – 17:00 | Institute tour | Dr. Mani S. Bhattacharya and Mr. E. Senthil Prasad |  |