



Venture Center
100, NCL Innovation Park
Dr. Homi Bhabha Road, Pune –411008
Email: eventsdesk@venturecenter.co.in
Phone: +91-20- 25865877

Technical Workshops Series – 2014

6 Days workshop on Plant Tissue Culture

- Organized by Venture Center -

Learn	Plant Tissue culture techniques: Demonstrations and Hands-on lab experiments Principles and applications of tissue culture, Preparation of tissue culture media, sterilization, Quick update on latest techniques / developments. Hands on training for various tissue culture techniques, Workshop is intended to learn basic tissue culture techniques.
Organized by	Venture Center – a Technology Business Incubator
For whom	<ul style="list-style-type: none">• Biotechnology, industry professionals• Students and staff of various disciplines of life sciences Maximum 20 seats; First-come-first-serve.
When	July 21-26, 2014
Where	Training Room and Lab Block, Venture Center, 100 NCL Innovation Park, Dr. Homi Bhabha Road, Pune-411008
Contact	Ms. Lipika Biswas Venture Center, 100, NCL Innovation Park, Dr. Homi Bhabha Road, Pune – 411008; Phone: +91-20-25865877 Email: eventsdesk@venturecenter.co.in
Cost	<ul style="list-style-type: none">• Students with valid ID card: Rs 6,000• Micro and small enterprises/ individuals: Rs 8,000• Medium and large companies/ others: Rs 12,000



Venture Center
100, NCL Innovation Park
Dr. Homi Bhabha Road, Pune –411008
Email: eventsdesk@venturecenter.co.in
Phone: +91-20- 25865877

Introduction

Plant tissue culture is a practice used to propagate plants under sterile conditions, often to produce clones of a plant. Different techniques in plant tissue culture may offer advantages over traditional methods of propagation including –

1. The production of exact copies of plants that produce better flowers, fruits or have other desirable traits.
2. The production of multiple copies of plants in the absence of seeds or necessary pollinators to produce seeds and thus mature plants.
3. Regeneration of whole plants from plant cells.
4. Production of genetically modified plants.
5. Production of plants in sterile containers that allows them to be moved with reduced chances of transmitting diseases.
6. Production of plants from seeds that otherwise have very low chances of germination and growth. E.g. orchids, *Nepenthes*.
7. Production of artificial seeds.
8. Production of haploid plants and thereby producing homozygous diploid plants.
9. Enhanced production of secondary metabolites which are pharmaceutically important.
10. To clean particular plant of viral and other infections and to quickly multiply these plants as 'cleaned stock' for horticulture and agriculture.

The workshop is designed to provide the same through theory sessions and lab exercises. Topics included in the workshop are Principles and applications of various facets of plant tissue culture, aseptic techniques, Basics of plant cells' requirements and media compositions, media preparations, sterilization techniques – glassware, media and plant sterilizations. Specialized techniques of direct and indirect organogenesis, somatic embryogenesis, micropropagation for large scale multiplication of plants, haploid production through anther culture, suspension culture – initiation, growth, cell counting and observation of cultured cells.

Course Outline

- The workshop will include theory as well as hands-on lab exercises and demonstrations at Venture Center.
- Talks by eminent faculty from various research institutes and industry.

Course Includes

- Hand out and workshop material
- Access to restricted website with online compilation of resources of archival value
- Certificate of Participation issued by Venture Center
- Tea and lunch at Venture Center cafeteria



Venture Center
 100, NCL Innovation Park
 Dr. Homi Bhabha Road, Pune –411008
 Email: eventsdesk@venturecenter.co.in
 Phone: +91-20- 25865877

Tentative Schedule			
Time	Session title	Lead	Venue
21 July 2014			
0830 – 0845	Registration		Foyer area
0845 – 0900	Introduction to the course and faculty	Dr. Premnath	Training Room
0900 – 1030	Theory – Introduction to Plant Tissue Culture	Dr. Malpathak	Training Room
1030 – 1100	Tea break		Foyer area
1100 – 1230	Theory – Media components, their role and significance	Dr. Abhyankar	Training Room
1230 – 1300	Media manipulation	Dr. Diwan	Training Room
1300 – 1400	Lunch break		Cafeteria
1400 – 1500	Practical – Media preparation	Dr. Abhyankar	Lab-block
1500 – 1530	Tea break		Cafeteria
1530 – 1700	Practical – Media preparation	Dr. Abhyankar	Lab-block
22 July 2014			
0900 – 1030	Theory – Micropropagation	Dr. Kendurkar	Training Room
1030 – 1100	Tea break		Foyer area
1100 – 1230	Theory – Use of molecular markers	Dr. Raman	Training Room
1230 – 1330	Lunch break		Cafeteria
1330 – 1500	Practical – Micropropagation	Dr. Diwan	Lab-block
1500 – 1530	Tea break		Cafeteria
1530 – 1700	Practical - Micropropagation	Dr. Diwan	Lab-block
23 July 2014			
0900 – 1030	Theory – Use of haploids in agriculture and biotechnology	Dr. Rajhans	Training Room
1030 – 1100	Tea break		Foyer area
1100 – 1230	Theory – Production of secondary metabolites	Dr. C.C. Giri	Training Room
1230 – 1330	Lunch break		Cafeteria
1330 – 1500	Practical – Anther culture	Dr. Abhyankar	Lab-block
1500 – 1530	Tea break		Cafeteria
1530 – 1700	Practical – Anther culture	Dr. Abhyankar	Lab-block



Venture Center
 100, NCL Innovation Park
 Dr. Homi Bhabha Road, Pune –411008
 Email: eventsdesk@venturecenter.co.in
 Phone: +91-20- 25865877

24 July 2014			
0900 – 1030	Theory – Organogenesis and embryogenesis	Dr. Hazra	Training Room
1030 – 1100	Tea break		Foyer area
1100 – 1300	Theory – Transgenics in agribiotechnology	Dr. Reddy	Training Room
1300 – 1400	Lunch break		Cafeteria
1400 – 1530	Practical – Embryogenesis	Dr. Raman	Lab-block
1530 – 1600	Tea break		Cafeteria
1600 – 1700	Practical – Embryogenesis	Dr. Raman	Lab-block
25 July 2014			
0900 – 1030	Theory – Phytoremediation	Dr. Hazra	Training Room
1030 – 1100	Tea break		Foyer area
1100 – 1230	Theory – Transformed hairy root cultures	Dr. Fulzele	Training Room
1230 – 1330	Lunch break		Cafeteria
1330 – 1500	Practical – Organogenesis	Dr. Abhyankar	Lab-block
1500 – 1530	Tea break		Cafeteria
1530 – 1700	Practical – Organogenesis	Dr. Abhyankar	Lab-block
26 July 2014			
0900 – 1030	Theory – Taking tissue culture technologies to market	Dr. John	Training Room
1030 – 1100	Tea break		Foyer area
1100 – 1230	Theory – Edible vaccines	Dr. Bapat	Training Room
1230 – 1330	Lunch break		Cafeteria
1330 – 1500	Practical – Suspension culture	Dr. Diwan	Lab-block
1500 – 1530	Tea break		Cafeteria
1530 – 1700	Practical – Suspension culture	Dr. Diwan	Lab-block
1700 – 1800	Concluding – Feedback, Certificate distribution	Dr. Premnath	Training Room

Anchor Faculty



Dr. Nutan Malpathak
 Professor, Department of Botany, University of Pune.

Research interest
 Plant biotechnology, Secondary metabolism



Venture Center
100, NCL Innovation Park
Dr. Homi Bhabha Road, Pune –411008
Email: eventsdesk@venturecenter.co.in
Phone: +91-20- 25865877

	<p>Dr. Gauri Abhyankar Assistant Professor, Department of Biotechnology, Abasaheb Garware College, Pune Research interest Plant biotechnology, natural products isolation and purification, plant transformations</p>
	<p>Dr. Renuka Diwan Research Associate, Department of Botany, University of Pune Research interest Plant tissue culture, Secondary metabolites, Biological activity, Mathematical modelling</p>
Other Faculty	
	<p>Dr. Vishwas Bapat INSA Fellow, Department Biotechnology, Shivaji University, Kolhapur Research interest Cell, organ and anther culture, organogenesis, embryogenesis, protoplast culture, synthetic seed technology and plant genetic engineering.</p>
	<p>Dr. D. P. Fulzele Head, Plant Biotechnology and Secondary Products Section, Nuclear Agriculture and Biotechnology Division, Bhabha Atomic Research Centre, Mumbai, & Asso. Professor, Homi Bhabha National Institute, Anushaktinagar, Mumbai Research interest Design and development of bioreactors for cell and organ cultures for product synthesis.</p>
	<p>Dr. Sulekha Hazra Rtd. Scientist, NCL, Pune Research interest Somatic Embryogenesis; Somaclonal Variation; Genetic Transformation; Phytoremediation</p>
	<p>Dr. Sujata Raman Research Associate, Department of Biotechnology, University of Pune Research Interest In Vitro Morphogenesis; Standardization of Tissue culture protocols for economically important of tree species and medicinal herbs; Understanding the mechanism of heavy metal tolerance in Plant tissues and synthesis of nanoparticles via biological route and their application in medicine and environmental safety.</p>



Venture Center
 100, NCL Innovation Park
 Dr. Homi Bhabha Road, Pune –411008
 Email: eventsdesk@venturecenter.co.in
 Phone: +91-20- 25865877

	<p>Prof. V. Dashavantha Reddy Director, Centre for Plant Molecular Biology, Osmania University, Hyderabad Research interest Molecular Biology, Genomics, Transgenic plants, Bioactive compounds from medicinal plants and Genetically engineered microbes for the production of recombinant enzymes and therapeutic molecules.</p>
	<p>Prof. C. C. Giri Centre for Plant Molecular Biology, Osmania University, Hyderabad Research interest Genetic improvement of plants using cell culture, protoplast system, and somatic hybridization, development of transgenic plants, tree biotechnology, and manipulation of medicinal plants <i>in vitro</i> for production of secondary metabolites of pharmaceutical value.</p>
	<p>Mr. Kishor Rajhans Mr. Rajhans is a founder member along with 12 people for KF Bioplants Pvt. Ltd. It is a plant biotech company, which is a joint venture between Kumar Properties and Florist de Kwakel B.V., Holland. The company was established in 1992. The company supplies plants like gerbera, carnation and anthurium all over India and to 25 countries around the world.</p>
	<p>Dr. Suchishwet Kendurkar Senior Principal Scientist, Plant Tissue Culture Division, Biochemical Sciences Division, National Chemical Laboratory, Pune Research interest Development of efficient genetic transformation systems; Development of commercially feasible technology for Micropropagation of teak and technology transfer to industries. Micropropagation system for rose spp. Somatic embryogenesis in coconut and mango.</p>
	<p>Dr. C. K. John Scientist, Plant Tissue Culture Division, Biochemical Sciences Division, National Chemical Laboratory, Pune Research interest Crop Improvement: induction of polyploidy, induction of mutations. Crop propagation through micropropagation. <i>In vitro</i> induction of flowering: for plant breeding/ production of high value, low volume phytochemicals. Greenhouse cultivation of premium crops.</p>

About the organizers
 Entrepreneurship Development Center (Venture Center) – a CSIR initiative – is a Section 25 company hosted by the National Chemical Laboratory, Pune. Venture Center strives to nucleate and nurture technology and knowledge-based enterprises by leveraging the scientific and engineering competencies of the institutions in the Pune region in India. The Venture Center is a technology business incubator supported by the Department of Science & Technology's National Science & Technology Entrepreneurship Development Board (DST-NSTEDB). Venture Center's focuses on technology enterprises offering products and services exploiting scientific expertise in the areas of materials, chemicals and biological sciences & engineering. For more information, visit <http://www.venturecenter.co.in>