



**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**(Established under Gujarat Act No. 20 of 2007)**

**ગુજરાત ટેકનોલોજીકલ યુનિવર્સિટી**  
(ગુજરાત અધિનિયમ ક્રમાંક: ૨૦/૨૦૦૭ દ્વારા સ્થાપિત)

Ref: GTU/R&D/ Webinar/KV/2014/5555

Date: 11-08-2014

**CIRCULAR**

Interested faculty members and students may register for the following webinars on August 12- 13, 2014

**Virtual Academy: Stem Cell Engineering and Regenerative Medicine; Dr.Raj R.Rao, Virginia CU** Tue, Aug 12, 2014 3:30 PM - 4:30 PM IST

Registration Web Link: <https://www3.gotomeeting.com/register/976007030>

Abstract: Human pluripotent stem cells (hPSCs) that include embryonic stem cells (hESCs) and induced pluripotent stem cells (hiPSCs) have generated a lot of interest in the scientific community based on their promise to revolutionize medicine. Their unique properties present opportunities for broad clinical applications including cell-based therapies, disease modeling and drug screening. Stem cell fate decisions are influenced by cells' interactions with components of their microenvironment, and include soluble and immobilized factors, the extracellular matrix, and signals presented by neighboring cells. This seminar will focus on multidisciplinary approaches to recreating or simulating microenvironments that may be critical for stably expanding and controlling the differentiation of stem cells ex vivo, for both basic biological research and therapeutic regenerative biomedical applications.

**Presenter:**

Raj R. Rao, Ph.D is Associate Professor of Chemical and Life Science Engineering in the VCU School of Engineering and has an affiliate faculty appointment in the Department of Human and Molecular Genetics in the VCU School of Medicine. He is also the Director of VCU's International Partnership with the Indian Institute of Technology, Kharagpur.

He is also a Council of International Partnership Director, coordinating innovative programs and research exchange between VCU and the Indian Institute of Technology at Kharagpur. Raj's research and educational programs are funded by both industrial and federal sponsors. Awards include the US National Science Foundation (NSF)-CAREER award (2008), the Qimonda Professorship (2009) and the VCU Engineering Student Council Outstanding Professor Award (2011).

**IUCEE Virtual Academy: Recent progress in fiber-optic communication systems; Dr.Shiva Kumar,**

**McMaster U** Wed, Aug 13, 2014 3:30 PM - 4:30 PM IST

Registration Web Link: <https://www3.gotomeeting.com/register/949488126>

Abstract: In this talk, recent progress in fiber communication systems will be reviewed. Impact of fiber dispersion and nonlinear impairments on system performance will be discussed. Coherent detection has recently revolutionized fiber optic systems. The coherent detection has enabled (i) digital compensation of transmission impairments and (ii) spectrally efficient modulation formats. The coherent detection technology and the associated digital signal processing will be discussed in detail. In addition, recently mode division multiplexing or space division multiplexing (SDM) has drawn significant attention. This technology is similar to MIMO in wireless communication. The improvement in channel capacity brought

**Winners of: ICT Enabled University Award E-India - 2009 Manthan Award – 2009**

Nr. Visat Three Roads, (Campus of Vishwakarma Government Engg. College & IIT, Gandhinagar), Sabarmati – Koba Highway, Chandkheda, Ahmedabad-382424. Gujarat, India. Tele: 079-23267500 E-mail : [registrar@gtu.ac.in](mailto:registrar@gtu.ac.in)  
URL : [www.gtu.ac.in](http://www.gtu.ac.in)



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out bySDM and the issues for its practical implementation will be discussed. *Level : Appropriate for advanced undergraduate students*

Presenter:

Shiva Kumar received the B.E. in Electronics and Communications from Mysore University, India (1988), MS (1990) and Ph.D. degrees (1994) in electrical communication engineering from Indian Institute of Science, India, and a Ph.D. degree (1997) in communications engineering from Osaka University, Japan. He worked as a postdoctoral fellow at University of Jena, Germany, supported by Alexander von Humboldt Foundation from 1997-98. He worked at Corning Incorporated, New York as a Senior Research Scientist (1998-2001), as a Supervisor (2001-2002) and then as a Project Leader (2002-2003). Currently he is a Professor at McMaster University, Canada. His current research interests include optical communication, solitons, nonlinear optics, photonic devices, optical phase conjugation and biomedical imaging using Raman spectroscopy. Dr. Kumar has published about 60 papers in refereed journals and 6 book chapters. He authored a book on fiber-optic communications, edited a book on nonlinear fiber optics, and holds eight US patents in the field of optical transmission systems.

-Sd/-

Registrar(i/c)

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