Resume of K. V. VENKATESH

PRESENT ADDRESS

Dr. K. V. Venkatesh.
Professor,
Department of Chemical Engineering,
Associate faculty, School of Biosciences and Bioengineering,
Indian Institute of Technology - Bombay,
Powai, Mumbai - 400076.
Email: venks@che.iitb.ernet.in , venks@iitb.ac.in
Telephone: (091) (22) 2576-7223 Fax: (091) (22) 2572-6895.
Webpage: http://www.che.iitb.ac.in/faculty/kvv/index.htm

QUALIFICATIONS

B. Tech. Chemical Engineering, I. I. T. Madras (1989).
Ph. D. Chemical Engineering, Purdue University, USA (1993).

AREA OF SPECIALIZATION: **Synthetic and Systems Biology; Biochemical Engineering**

Quantification of Biological Networks
Analysis of Metabolic and Regulatory Networks
Optimization and Development of Biological Processes

Recent Publications in 2012-2014 (total peer reviewed publications: 120)

1. The structure of dynamic GPCR signaling networks, PR O'Neill, L Giri, WK Karunarathne, AK Patel, KV Venkatesh, N Gautam, Wiley Interdisciplinary Reviews: Systems Biology and Medicine 6 (1), 115-123, 2014
2. Steady state analysis of the genetic regulatory network incorporating underlying molecular mechanisms for anaerobic metabolism in Escherichia coli, S Srinivasan, KV Venkatesh, Molecular BioSystems, 2014
3. Non-coding RNA interact to regulate neuronal development and function, BR Iyengar, A Choudhary, MA Sarangdhar, KV Venkatesh, CJ Gadgil, Beena Pillai, Frontiers in cellular neuroscience 8, 2014
4. Stochastic galactokinase expression underlies GAL gene induction in a GAL3 mutant of Saccharomyces cerevisiae, RK Kar, M Qureshi, AK DasAdhikari, T Zahir, KV Venkatesh, PJ Bhat, FEBS Journal 281 (7), 1798-1817, 2014
5. Study on the Effect of Glucose on Trg Receptor of Escherichia coli Using Soft Agar Experiment, R Karmakar, MS Tirumkudulu, KV Venkatesh, Indian Chemical Engineer, 1-6, 2014
6. Study of CFU for individual microorganisms in mixed cultures with a known ratio using MBRT, SK Nandy, KV Venkatesh, AMB Express 4 (1), 1-7, 2014
7. A G protein subunit translocation embedded network motif underlies GPCR regulation of Calcium oscillations, L Giri, AK Patel, WKA Karunarathne KV Venkatesh, N Gautam, Biophysical Journal, 2014
8. A conceptual review on systems biology in health and disease: from biological networks to modern therapeutics, Somvanshi PR and KV Venkatesh, Systems and Synthetic Biology, 2013
9. Optical control demonstrates switch like PIP3 dynamics underlying the initiation of immune cell migration, Karunarathnea, Giri, Anilkumar Patel, Kareenhalli V. Venkatesh and N. Gautam, PNAS, 2013.
10. Analysis of Osmoadaptation system in budding yeast suggests that regulated degradation of glycerol synthesis enzyme is key to near-perfect adaptation, Anil Patel, Sharad Bhartiya and KV Venkatesh, Systems and Synthetic Biology, 2013.
11. Characterization of burden on growth due to the nutritional state of media and pre-induced gene expression, P Malakar and KV Venkatesh, Archives of Microbiology, 2013.
12. Effect of substrate and IPTG concentrations on the burden to growth of Escherichia coli on glycerol due to the expression of Lac proteins, P Malakar and KV Venkatesh, Applied Microbiology and Biotechnology, 2012.
13. ^{13}C Metabolic Flux Analysis, Meghna Rajvanshi and KV. Venkatesh, Book Chapter in Encyclopedia of Systems Biology, Springer, 2012.
14. Flux Balance Analysis, Meghna Rajvanshi and KV. Venkatesh, Book Chapter in Encyclopedia of Systems Biology, Springer, 2012.
15. Amplification, KV Venkatesh, Book Chapter in Encyclopedia of Systems Biology, Springer, 2012.
16. Genetic Regulation, Mechanisms, RS Pramod and KV Venkatesh, Book Chapter in Encyclopedia of Systems Biology, Springer, 2012.

17. Pathway Modeling, Metabolic, Meghna Rajvanshi and KV. Venkatesh, Book Chapter in Encyclopedia of Systems Biology, Springer, 2012.
18. Metabolic Flux Analysis, Meghna Rajvanshi and KV. Venkatesh, Book Chapter in Encyclopedia of Systems Biology, Springer, 2012.
19. Warburg Effect, Lalith Durante, KV Venkatesh and PJ Bhat, Book Chapter in Encyclopedia of Systems Biology, Springer, 2012.
20. Ultrasensitivity, KV Venkatesh, Book Chapter in Encyclopedia of Systems Biology, Springer, 2012.
21. Growth Related Model Of the Gal System In Saccharomyces Cerevisiae Predicts Behavior Of Several Mutant Strains, Pannala Venkat, Hazarika Saumar, Bhat P Bhartiya Sharad, K V Venkatesh, IET Systems Biology, 2012.
22. Prediction by Promoter Logic in Bacterial Quorum Sensing, Navneet Rai, Rajat Anand, Krishna Ramkumar, Varun Sreenivasan,Sugat Dabholkar, K. V. Venkatesh, Mukund Thattai, PLOS Computational Biology, 2012

AWARDS AND RECOGNITION

1. Lead speaker on Systems Biology and medicine, Indo-US Frontiers meet for Scientists, Agra, USA, 2012.
2. HH Mathur award for excellence in research for applied Sciences, IIT Bombay 2011.
3. Hetro-Drugs GS Laddha memorial Lecture, Chemcon 2011, Bangalore.
4. UGC Distinguished Fellow, Department of Chemical Engineering, Indian Institute of Science, Bangalore, 2009-2010
5. Associate Editor, BMC Systems Biology 2009-current.
6. Member Editorial Board, International Journal of Systems and Synthetic Biology
7. International judge for international Genetically Engineered Machines (iGEM-2009), MIT USA
8. Invited to an International Workshop on “Physiological Modeling” organized by The Mathematical Biosciences Institute, Ohio State University, USA, May 21-24, 2007.
9. Invited by Royal Society, London, UK to a workshop on Advances in Biosciences as relevant to Systems and Synthetic Biology, September 2006.
10. Member of Organizing comittee, Indo-US Frontiers of Engineering Meet, jointly hosted by National Academy of Engineering, USA and Indian National Academy of Engineering, March 2-4, 2006.
11. Swaranjayanthi Fellowship from DST (2004).
12. Hindustan-Dorr-Oliver Award for Excellence in use of technology in Rural Development (2004)
13. Anil Kumar Bose award from Indian National Science Academy (INSA) for paper published in Journal of Biological Chemistry (2004).
14. Visiting Research Fellow, School of Molecular and Biological Science, Oxford (Brookes) University, Oxford, UK (May-June, 2002).
15. Visiting Research Professor, Department of Chemical Engineering, University of Delaware, Delaware, USA from January 2001 to Deccember 2001.
16. INSA Young Scientist Award, 1999 from Indian National Science Academy for Research.
17. INAE Young Engineering Award, 1998 from Indian National Academy of Engineers.
18. Amar-Dye-Chem Award, 1999 from Indian Institute of Chemical Engineering for excellence in research.

PhD THESES GUIDED:

1. Ms. Anuradha Raghunathan, Simultaneous Saccharification and Fermentation of starch, 1999.
2. Ms. Jyoti Bajpai Dikshit, Quantification of metabolic network of *Lactobacillus rhamnosus,* 2003.
3. Malkhey Verma, Protein production utilizing Recombinant Yeast in Bioreactors, 2005.
4. Vivek Mutalik, Quantification of signaling and regulatory networks, 2006.
5. Kalyan Gayan, *In-silico* analysis of Metabolic Networks, 2007.
6. Nikhil Chaudhary**,** Study of the regulatory design of Tryptophan system in *Escherichia coli*, 2007
7. Subodh Rawool, Steady state analysis of gene regulatory networks – simulation of micro-array data, 2008.
8. Manish Shakdwipee, Analysis of Renewable Hydrogen Options, 2008
9. Subir K Nandy, Effect of nutritional stress on the viability of *B. subtilis* and *E. coli* in mixed culture, 2009.
10. Vinod PK, Quantification of signalling networks in Yeast and Mammalian systems to nitrogen availability 2009.
11. Suhas Zambre, Application of ozone in enhancing shelf life of tomato and potato, 2009.
12. Abhijit Chauhan, Optimal operation of fermentation processes: Application to flavours production, 2010
13. Ms. Rajitha Vuppula, Chemotaxis of *E. coli* to controlled gradients of attractants, 2010
14. Venkat Pannala, Dynamic analysis and Characterization of the GAL system in Yeast, 2011.
15. Jignesh Parmar, System Level Analysis of Osmotic Effect on Yeast, 2011.
16. Ms. Anbumathi P, Cell Cycle Modeling of *S. Pombe*, 2012.
17. Ms. Meghana Rajvanshi, Metabolic network analysis of *C. Glutamicum* under stress conditions, 2012.
18. Navneet Rai, Synthetic genetic network to demonstrate bistability and oscillations, 2012.
19. Pushkar Malakar, Burden on growth and optimality due to protein synthesis, 2013.
20. Deepti Deepika, Chemotaxis in response to glucose gradients, 2014.
21. Anilkumar Patel, Temporal and spatial effects on dynamics of signalling networks, 2014.
22. Pramod Somavanshi, Simulation of whole body metabolism in humans, 2014.