# 【清华信息大讲堂】第六十五讲

## Dr. Suresh Goyal

### GreenTouch®　Bell Labs

## GreenTouch®: A Five Year Quest for Sustainable Networking

**Nov. 4, 14:00-17: 00**　　　**Room 1-415, FIT Building**

**Abstract:**

GreenTouch® is a global research consortium, formed under the initiative and leadership of Bell Labs, with the goal of inventing sustainable, ultra-energy-efficient, ICT networks. In particular it aims to demonstrate technologies in five years (at the end of 2015) that could make the network a thousand-times more energy efficient in 2020 over a baseline network energy efficiency of 2010. ICT networks, freed from the encumbrances of energy-consumption limitations, are expected to play a major-role in enabling a low-carbon economy and in fostering rich new applications that will define the way we live, learn and play. I will talk about the main factors – a network that doubles every two-three years and the slowdown in some key innovation areas – that lead us to believe that ICT network innovation has to be focused on a complete re-thinking of networks from an energy-efficiency perspective. I will briefly cover the Bell Labs analyses on estimating how much is possible in increasing network energy efficiency.

The rest of my talk will address the operational structure of GreenTouch®, the progress of GreenTouch®, our research goals and ideas.

**Dr. Suresh Goyal** leads the Green Research theme at Bell Labs involving cross-domain research on

sustainable networks and energy-efficiency enablement. Bell Labs' green research involves more than a hundred researchers and a large number of external collaborators. A center point of Bell Labs' green research is GreenTouch®. Suresh led the Bell Labs research teams that performed the analyses leading to the formation of GreenTouch®.

Suresh also holds an Adjunct Professor position at the University of Limerick, in Limerick, Ireland, with a research focus on mechanics and energy harvesting. He is a founding member of Bell Labs Ireland, and the CTVR, where he led the Test and Reliability research group, and co-led strategy development, for 5 years. He has previously held positions in optical networking research and wireless packaging research in Bell Labs. Suresh also served as Adjunct Professor at Carnegie-Mellon University, in Pittsburgh, PA.

Suresh obtained his PhD from Cornell University, in Ithaca, NY, an MS from the University of Iowa, in Iowa City, IA, and a B.Tech from the Indian Institute of Technology, Kharagpur, India. He is a Fellow of the ASME. He has more than 70 peer-reviewed publications, 12 patents, 3 Best Paper awards, and several Internal Bell Labs awards. Suresh has co-supervised 3 PhD students, 2 Master's students, and mentored several Senior researchers and students.

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