

# Great Lakes Symposium covers economic energy, Smart Grid

**Swasti Khuntia**

LAYOUT EDITOR

The third annual Great Lakes Symposium on Smart Grid and the New Energy Economy was organized at the Illinois Institute of Technology last week from the September 23 to 25. Continuing the trend set from last year, this year was also a grand success with attendees from all over the globe.

Dr. Mohammed Shahidehpour, Bodine Chair of the Electrical and Computer Engineering (ECE) Department and also the Director of Galvin Center for Electricity Innovation thanked everyone for the grand success of the international symposium, attended by international researchers, experts, scientists and people from industries included keynote speeches, plenary sessions, technical presentations, and tutorials on smart grid and its applications.

The organizers described the Great Lakes Symposium as a one-of-a-kind event that breaks new ground in smart grid design and development and showcases smart grid best practices from around the country along with new technologies and ideas that are spurring innovation, growing state economies, reducing emissions and empowering consumers to

conserve and save.

Although the dates announced were the 23rd to 25th September, the symposium organized a short course on 22nd September on various aspects of smart grids, i.e., its implementation, creation of its roadmap, security aspects and distribution automation. The official opening of the symposium featured keynote speech followed by plenary sessions. Dr. Shahidehpour welcomed all the attendees by addressing the crowd about the symposium agenda and then it was followed by a plenary discussion on "Smart Grid Innovations in Illinois."

The other plenary discussion on "Virgin Islands Solar PV Initiative" was an interesting topic. This is because Veriown, a Chicago based solar-energy startup has offered the University of the Virgin Islands a slash down of the Island's incapacitating energy costs. Veriown has collaborated with the Galvin Center for Electricity Innovation at the Illinois Institute of Technology to develop the next generation of microgrids. Another interactive session was a panel discussion on "Will Smart Grid Create New Jobs?" This session was more focused on job creation in Illinois since there were speakers from ComEd, Illinois Green Economy Network and two community

colleges, i.e., Lewis and Clark Community College and Lake Land Community College.

The second day too had a variety of topics starting from microgrid evolution, enhancement, grid modernization, etc. The day started with keynote speech by Jianhui Wang from Argonne National laboratory and Steve Pullins, President of Horizon Energy Group. The talk was about "Microgrid Evaluation in Distribution Service Restoration After a Blackout." It was followed by a plenary session on "Microgrids for Enhancing the Grid Resiliency" by people from S&C Electric, University of Lulea-Sweden, Electric Power Research Institute, MIT, Horizon Energy Group and National Renewable Energy Laboratory. It was indeed a very informative session.

The plenary was followed by a series of simultaneous panel session on "Wind Energy from the Windy City", "Grid Modernization for Power System Enhancement" and "Clean Energy Manufacturing." The afternoon plenary session was another informative one, discussing the topic "Electricity Market and Regulations." After the discussion, there were two panel sessions and one paper session. Both the panel discussions were more industry oriented while the paper session had student participation. The

theme for paper session was "microgrids" and it had papers on various novel and interesting areas of microgrids.

The third and last day was pretty short, comprised of a keynote speech, plenary and paper sessions and two panel discussions. The keynote session on "Building Resilience into the Smart Grid" by William Sanders from University of Illinois at Urbana-Champaign gave a broad and clear prospect about the research they're doing at their university. He also gave an insight about Trustworthy Cyber Infrastructure for the Power Grid (TCIPG), the research group at University of Illinois where they collaborate with other universities to work on improving the national power grid making it more reliable, secure and safe. Following this was the plenary session on "Increasing Adoption: Intelligent and Trustworthy Smart Grid." The day ended with two simultaneous panel discussion on "Big Data in Smart Grids" and "Advanced Electric Vehicle Technology", and paper session on "Power System Operation and Control."

Apart from the sessions, companies like S&C Electric, ComEd and Ameren Illinois had their stalls in the Herman Hall to attract the crowd.

*Photos courtesy of Galvin Center of Electricity Innovation*



## 'Raw Fuel behind Innovation' speaker emphasizes importance of science

**Utsav Gandhi**

CAMPUS EDITOR

The Homecoming 2013 lecture, organized by the College of Science, started off with a welcome message by Dr. Martin C. Jischke (PHYS '63), who spoke about how a solid academic background (including a whirlwind seven week course in classical thermodynamics) prepared him for an exciting career in university leadership. He then introduced Dean Russell Betts of the College of Sciences, who himself has had a stellar career at various top educational and research institutes around the world, and great success in his work with atomic, nuclear and high-energy physics. Probably one of the most apt personalities at IIT to deliver the content of the day's lecture, "Science: the Raw Fuel behind Innovation" - talking more about how science

drives creativity and fuels our economy. Dean Betts started off with a brief insight into the nexus between revolutionary ideas (Newton, Einstein, Mendelev), out-of-the-box methods (Perkins, von Braun) and products (everything ranging from sliced bread to the iPhone). The correlation between science and its applications are what have created innovation, wide-ranging even in the law and business market.

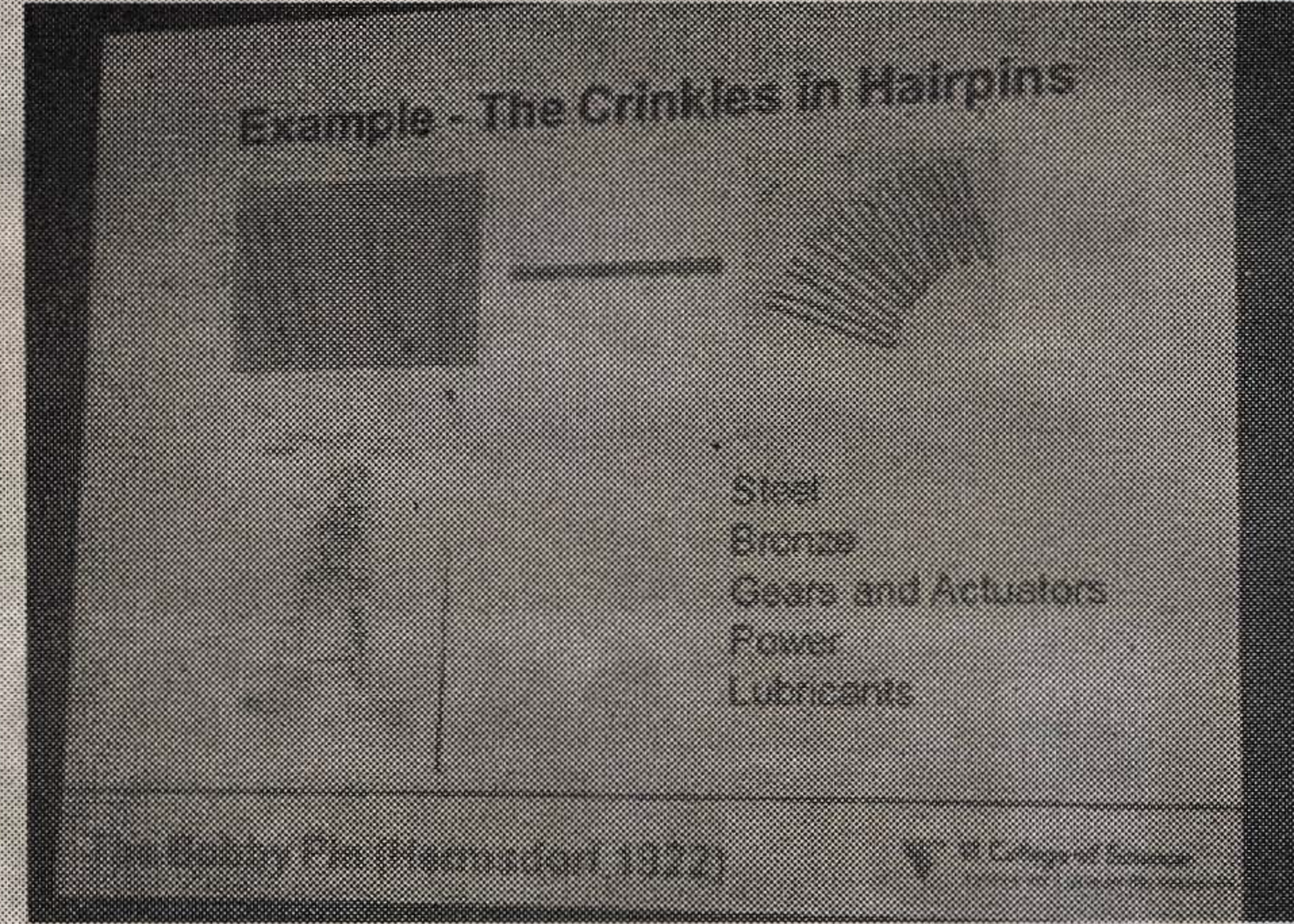
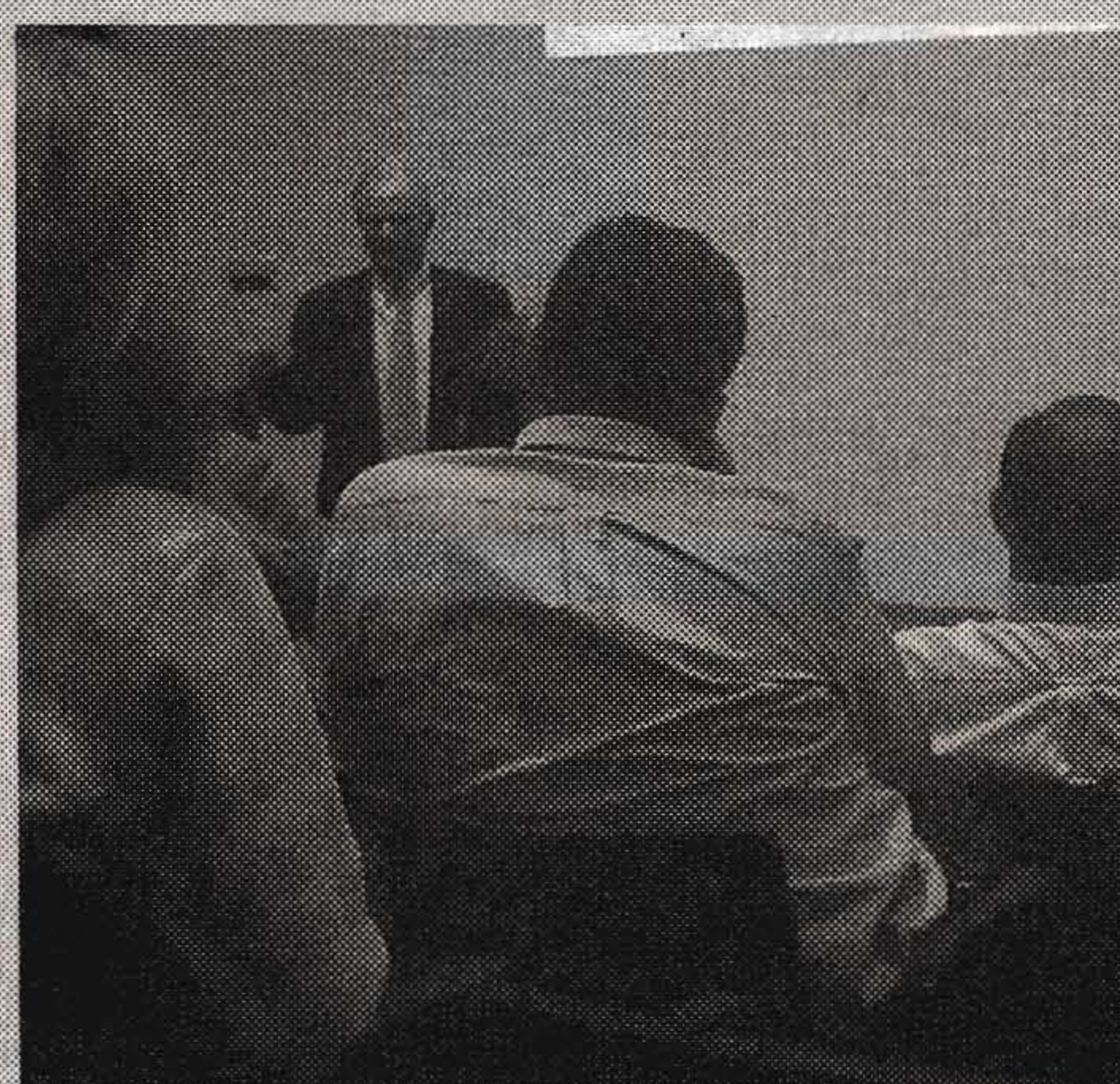
He then went on to give some highly relevant and inspiring examples of great scientists who have gone on to create some of the most path breaking inventions of our times. The crinkle in hairpins, the Carnot heat engine, Louis Pasteur's work ("Fortune favors the prepared mind", he said, inspiring the College's motto: "Preparing Minds"), the MRI machine's ability to differentiate density, the University of Chicago's Albert Michelson and his work on proton magnetic structure, and finally Kammerlingh Onnes' work on

superconducting magnets and their industrial scale production.

The hallmarks of an innovator, he went on to stress, are to be able to connect and communicate across disciplines, have an adventurously creative spirit, have access to time and resources, as well as a knack for profound, rather than passive thinking. The independently wealthy scientists of Europe have traditionally enjoyed the privileges of strong industrial connections, whereas the privately funded research institutes of the US have lagged behind due to a shortage of PhD and research degree conferring institutes. This changed after World War II, which brought with itself a spurge in government and academic research partnerships, starting with President Roosevelt's association with Vannevar Bush, as well as necessitated the differentiation between pure and applied research. On one hand, pure research is

curiosity driven, with a strong potential for future innovation; whereas applied research is goal driven, often for business and commercial applications. He also made a comment about how technical research labs in countries like Germany would not be run by MBA graduates - whereas many of their counterparts here in the States are becoming increasingly short term, profit oriented.

Recent government legislation has pushed for greater economic incentives for innovation and investment, aiming to keep the best and brightest in science and engineering rather than sending them off to MBA and law programs. There is also an increasing shift from inter-disciplinary to trans-disciplinary research. The question is, how and where does an academic program as rigorous and relevant as IIT's, as well as our own path breaking visions like the Innovation Center, fit into this larger scheme of things?



*Photos by Utsav Gandhi*