

# Technology Transfer & Intellectual Property News

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## New Invention Disclosures

### University of Kansas Lawrence Campus “KeyConcept”

Susan Gauch, Professor of Electrical Engineering & Computer Sciences

As the number of Web pages grows, users experience difficulty finding documents relevant to their interests. One of the underlying reasons for this is that most search engines find matches based on key words, regardless of their meaning. This invention is a computer program that is a new indexing and retrieval technique for web pages.

### “Solid-state NMR Probe for Multiple Sample Analysis”

Eric Munson, Associate Professor of Pharmaceutical Chemistry

This invention is an improvement to the way solid-state NMR samples are analyzed. This probe will be designed using existing technology, but combined in a method that is unique. The unique feature of this design is that a new sample will be exchanged for the solid sample in a short amount of time increasing throughput with the NMR spectrometer by a factor of 10 or more.

### University of Kansas Medical Center “A new criterion for motion tracking accuracy in elasticity imaging”

Timothy Hall, Jingfeng Jiang, Yanning Zhu, Department of Radiology.

This is a new use of image processing technology which provides a new criterion for judging the performance of a motion-tracking algorithm. Current image processing uses normalized cross correlation as a motion tracking algorithm and uses magnitude of the correlation coefficient as a measure of the quality of the motion estimate. The inventors have created an image that is motion-compensated and therefore stable in time by using the estimated motion to compensate for the true motion. The extent to which motion is compensated then provides a criterion on which to judge the motion tracking. As local errors in motion tracking occur they can be detected and corrected by monitoring the compensated image. This technology will enhance the capability of ultrasonic image processing when incorporated.

### “ A portable device used to measure quantitatively, stroke symptoms”

Wen Liu, Ph.D., Department of Physical Therapy & Rehabilitation Sciences.

This is a new unique portable device that records time-series measurement of major stroke symptoms. The device will store all measured data and allow the computer to do the comparison along the time course of a patient's recovery. Information on the symptoms and their time course are very important for clinician's to apply the appropriate rehabilitation treatment. This device can easily be used in

clinical facilities, nursing homes, as well as in private homes. It will reduce the costs and minimize the difficulties associated with transporting stroke patients.

### Information and Telecommunication Technology Center *At the University of Kansas Lawrence campus*

The vast growth in Internet traffic has challenged Web site developers to produce higher quality sites that can be quickly downloaded. The Internet has evolved from supporting simple text data to high quality voice, images and real-time video. Information and telecommunication Technology Center (ITTC) researchers are finding ways to increase the speed of the Internet.

Ron Hui, an associate professor in electrical engineering and computer science, received a patent in September for a "Method and device for encoding data into high speed optical train." Hui worked with two professors in California to develop microscopic optical technology, which can be used to generate higher-frequency radio signals that can speed up Internet access.

Hui, along with fellow researchers Jin Hong and Maurice O'Sullivan, created devices and methods for encoding data into a high-speed optical train that can be used with present modulators and upgraded as advances in technology occur. Hui's patent resulted from the work that the researchers did with Nortel Networks, a company that delivers networking and communications services and infrastructure for customers in more than 150 countries.

ITTC investigates numerous aspects of the convergence of computing, communication, and sensor technologies. Supported by KTEC, governmental funding agencies, and local and international industry partners, ITTC's focus is upon leading edge solutions to telecommunication and information technology problems. More than 35 faculty researchers and 130 students are involved in research at the ITTC.

For more information, please check out the following sites  
ITTC Web site: [www.ittc.ku.edu](http://www.ittc.ku.edu)  
Ron Hui: [http://www.tisl.ukans.edu/view\\_contact.phtml?id=72](http://www.tisl.ukans.edu/view_contact.phtml?id=72)  
Information and Telecommunication Technology Center (ITTC).

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