

## ASU, City University of Hong Kong partner in flexible electronics

November 07, 2011

Arizona State University is partnering with City University of Hong Kong (CityU) to advance flexible electronics systems.

The "CityU-ASU Collaborative on Flexible Systems" was launched on Nov. 2 at an event held at CityU. The two universities paved the way for such projects when they signed a Memorandum of Understanding last April.



Representatives from ASU and City University of Hong Kong met on Nov. 2 to formalize a collaboration on flexible electronics. From left to right: David Allee, Gregory Raupp, Sethuraman "Panch" Panchanathan, and Johnny Ho.

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"This exciting collaboration allows our universities to leverage one another's expertise and industry links, and provide our students with a valuable global research experience," said ASU President Michael M. Crow. "We know there is interest in flexible electronics among Asian technology companies and believe this is a field that holds great promise in the competitive economic environment."

ASU is already a leader in developing flexible electronics through its Flexible Display Center, created in 2004 through a cooperative agreement with the United States Army Research Laboratory. The FDC seeks to accelerate the commercialization of flexible, lightweight, low-power and rugged display and electronics technologies.

Such devices could provide a wide variety of applications. For example, soldiers in the field could receive real-time maps, mission briefs, and other information on screens sewn into their uniform sleeves. In the commercial realm, flexible displays offer possibilities for improving technologies from e-readers to conferencing systems.

"The collaboration will promote the exchange of faculty, students and researchers between the two sites. And it will help us to secure research grants from Hong Kong and the U.S. in order to expand our efforts," explained Sethuraman "Panch" Panchanathan, senior vice president for ASU's Office of Knowledge Enterprise Development.

In this alliance, ASU provides expertise and unique pilot line manufacturing capability in flexible microelectronics based on state-of-the-art amorphous silicon thin film transistor (TFT) technology, and also emerging metal oxide TFT technology.

CityU offers expertise in flexible nanowires, a potential high-performance TFT technology. If nanowire TFTs can be implemented on a manufacturing scale, they could open the door to powerful new applications for flexible electronics.

ASU has already worked with CityU on a pending proposal for an NSF Engineering Research Center on Large Area Sensing Arrays. These arrays would use bendable transistors in a plastic sheet and could detect phenomena such as radiation or biomarkers for applications ranging from security to infrastructure health monitoring to assistive technology for the sight-impaired. The proposal is led by the University of Texas at Dallas and also includes Princeton, North Carolina A&T State University and Seoul National University.

David Allee, director of Research for Backplane Electronics at the FDC, will lead ASU's side of the partnership. Gregory Raupp, the founder and former director of the FDC, will manage the collaboration in Hong Kong in his current role as vice president (research and technology) at CityU. Technical leadership is provided by Edwin Pun, chair professor of electronic engineering, and Johnny Ho, assistant professor of materials science, both at CityU.

"This venture is quite exciting, both from a perspective of the potential impact of a major technology breakthrough, as well as the opportunity for CityU to become engaged in a large international technology R&D collaboration," said Raupp, adding that on a personal level, it affords him the "opportunity to continue and

deepen my relationships with ASU and other global leaders in the field."

"ASU's vision and mission align beautifully with CityU's," said CityU President Way Kuo. "The launch of this collaborative project represents the first of several key strategic partnership targets we have identified, which collectively will open up new research avenues and industry engagement possibilities and help us provide a truly global education to our students."

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