Research into visible light communications gets $18.5m from NSF

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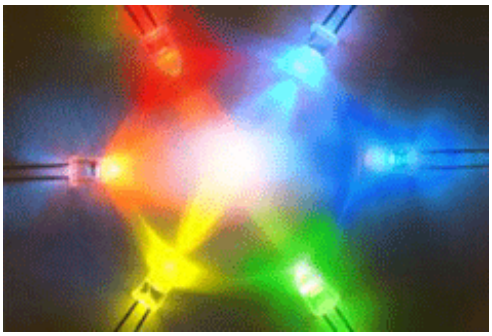

A trio of US universities have been given $18.5m of funding to research smart lighting technologies.

America's National Science Foundation has awarded the money to Rensselaer Polytechnic Institute in New York state to create an Engineering Research Center, with partners Boston University and the University of Mexico.

The Smart Lighting Center will develop light-emitting diode (LED) technologies for low-energy illumination and free-space communications. The project is expected to receive up to $50 million in funding over the next 10 years. The bulk of this funding will come from the NSF, with additional support from New York state, Rensselaer, and 18 industrial partners. NSF funding began in September with $3.25 million for the Center's first year. New York has committed $700,000 to the Center's first year, and first-year funding from industrial partners is expected to approach nearly $1 million. Rensselaer is committing more than $500,000 to help launch the Center.

The Center will concentrate on developing novel materials, device technology, and systems applications for smart lighting.

Twenty faculty researchers from Rensselaer, along with 10 researchers from partners Boston University and the University of New Mexico, will staff the new Center. Students, postdoctoral researchers, and visiting industry engineers will also be regular contributors to the research conducted at the Smart Lighting ERC.

"The Smart Lighting ERC is the first in our extensive portfolio of ERCs in optics and electronics that focuses on advancing LED technology for new lighting systems that will have the capacity to deliver increased functionality in displays, transportation, and communication systems with significant savings in energy use," said Lynn Preston, the leader of the Engineering Research Centers Program at NSF.

Kenneth Lutchen, dean of the college of engineering at Boston University, said: "Smart Lighting offers the potential to reshape and advance wireless communications technology."

At the heart of smart lighting are powerful techniques to control the basic properties of light. With recent breakthroughs in the first true anti-reflective coating, nano-emitter growth, control of the refractive index of materials, and the demonstration of the first viable polarised LED-based light sources, researchers are now better able to control almost every aspect of light.

"The capabilities of smart lighting surpasses and transcends the abilities of conventional lighting," said Fred Schubert, Wellfleet senior constellation professor of future chips at Rensselaer, who will lead the Center. "With smart lighting, we have absolute control over every aspect of the light, from polarisation to temporal modulation and spectral composition. We can tailor a light source for nearly any imaginable scientific or commercial application."

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