

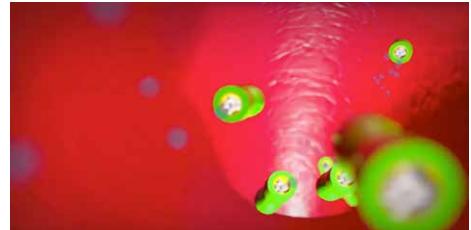
MONTHLY
NEWS

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2017

Micromotors Neutralize Stomach Acid, then Deliver Drugs

Nanoengineers at UC San Diego are developing a new method for administering acid-sensitive drugs in the stomach to treat ulcers, Helicobacter pylori infections and more. Their experimental micromotors will carry drugs to the stomach, but only release them after the tiny biocompatible machines have sufficiently neutralized the surrounding gastric acid. This approach could avoid the side effects associated with today's methods for neutralizing stomach acid before administering drugs. The work, covered by the Wall Street Journal, is a collaboration between the nanoengineering labs of professors Liangfang Zhang and Joseph Wang at the Jacobs School of Engineering.

Read more: bit.ly/MicromotorStomach



UC San Diego's First Biomedical Incubator

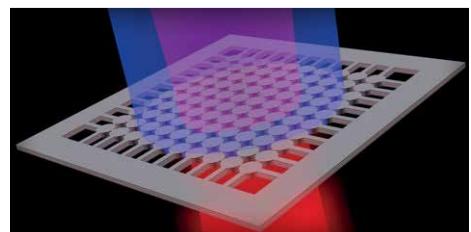
UC San Diego students have launched the first biomedical incubator on campus. Blue LINC aims to inspire and motivate UC San Diego teams to bridge gaps between clinical needs, engineering expertise and technology transfer. Physicians, for example, are often aware of clinical problems with potential engineering solutions, but lack the time or resources to address them. On the other hand, engineering, medical and MBA students often have technical and business know-how but need access to real-world clinical problems. Are you interested in learning about clinical-advisor opportunities? Are you a clinician with project ideas? Visit bluelincsd.com. It's a collaboration between the School of Medicine, the Jacobs School of Engineering and the Rady School of Management.

Read more: bit.ly/BiomedIncubator

New Laser for Telecom, Computing and Medicine

Electrical engineers at the Jacobs School have created a new type of laser that could be more energy-efficient than conventional lasers and could lead to faster optical communications and more powerful computers. The work from the labs of Boubacar Kante and Shaya Fainman appears in the journal Nature. The laser relies on a phenomenon known as bound states in the continuum (BICs), which allows researchers to build a laser cavity in open air. According to coverage in IEEE Spectrum, the BICs laser cavity is a photonic crystal shaped to limit and control how light waves can propagate. The team built its laser to work at a popular telecommunications wavelength, but it can be tuned to emit beams of different wavelengths. Medical lasers specifically targeting cancer cells are one future application.

Read more: bit.ly/TelcoMedLaser



Connect with the Jacobs School on April 20

Attend Research Expo 2017 on April 20 and get an insider's look at engineering and computer science research at the Jacobs School. Talk technology with 200+ graduate students at the poster session. Attend 20-minute faculty talks for industry-relevant research highlights from Jacobs School centers designed for collaborations with corporate partners. Network with faculty, students, alumni and industry professionals. Register today. Need convincing? Read a Research Expo success story.

Read more: jacobsschool.ucsd.edu/re



Swarms of Ocean Robots with Underwater GPS

Underwater robots developed at UC San Diego offer scientists a new tool to study ocean currents and the plankton they transport. The campus-wide team's computer scientists developed an underwater GPS-like system to track the movements of swarms of the miniature autonomous underwater robots as they drift in the ocean. Since GPS doesn't work underwater, computer scientists led by professor Ryan Kastner developed algorithms that used a wide range of inputs to generate a best estimate of the robots' position at all times. The underwater robots could potentially be deployed in swarms of hundreds to thousands to capture a three-dimensional view of the interactions between ocean currents and marine life. The project is a collaboration between the Scripps Institution of Oceanography, the Jacobs School of Engineering and the Qualcomm Institute.

Read more: bit.ly/OceanRobots

Brewing Beer on the Moon

A team of UC San Diego engineering undergraduates is vying to get their beer-brewing experiment on a rocket headed to the moon. The team is currently refining designs for a space ready beer-brewing canister system, which will keep the unfermented beer – the wort – separate from the yeast. Once on the moon, a valve will open between two compartments, and the wort and yeast will mix, producing alcohol and carbon dioxide. Watch a video explainer.

Read more: bit.ly/BeerOnMoon

