



### FH MONDAY

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A different type of 2D semiconductor

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Samsung Electronics Tech Chosen

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NXP-Freescale merger nears completion

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AMD to relieve 5% of global employees

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## **A different type of 2D semiconductor**

To add the growing list of 2D semiconductors such as graphene, boron nitride (BN), and MoS<sub>2</sub>, whose electronic properties make them potential successors to silicon, researchers at the US Department of Energy (DOE)'s Lawrence Berkeley National Lab have added hybrid organic-inorganic perovskites.

However, unlike the other contenders, which are covalent semiconductors, these 2D hybrid perovskites are ionic materials, which gives them special properties of their own.

The team at Berkeley Lab has successfully grown atomically thin 2D sheets of organic-inorganic hybrid perovskites from solution. The ultrathin sheets are of high quality, large in area, and square-shaped. They also exhibited efficient photoluminescence, colour-tunability, and a apparently a unique structural relaxation not found in covalent semiconductor sheets.

"We believe this is the first example of 2D atomically thin nanostructures made from ionic materials," says Peidong Yang, a chemist with Berkeley Lab's Materials Sciences Division who first came up with the idea for this research 20 years ago.

## **Largest 3D printing factory in Southeast Asia opens in Singapore**

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Launched by Ultra Clean Asia Pacific (UCT), which develops and supplies systems for the semiconductor industry, the UCT Additive Manufacturing Center will target business sectors such as aerospace, dental and medical, among others. It will offer services for consumers as well.

## **Samsung Electronics Tech Chosen as Next-gen US Broadcast Standards**

A technology proposed by Samsung Electronics was selected as an interim standard for the next-generation ATSC 3.0 broadcast platform in the United States. The technology is also highly likely to be chosen as the next-generation terrestrial broadcast and UHD broadcast standards in South Korea. More Like This Standards Domination: Samsung UHD Broadcasting Tech Adopted as Standard in North America ATSC 3.0: LG Electronics Succeeds in US Field Test of Next-gen Broadcasting Standard Market Leader: Samsung Teams Up with US Broadcasters to Lead UHD TV Standards MPEG Media Transport: Video Transmission Tech Led by Samsung Adopted as Standard in N. America, Japan Virtual Desktop Access: Korea's DaaS Technology Approved as International Standard for Cloud Computing Samsung Electronics announced on Sept. 29 that its technology was approved as the interim standard for the new ATSC 3.0 terrestrial broadcast platform after the U.S. Advanced Television Systems Committee (ATSC) conducted electronic voting for all member companies earlier this month. The technology is the ATSC 3.0 physical layer standard and includes Low Density Parity Check (LDPC) and Non-Uniform Constellation (NUC) features. LDPC is a technology that effectively restores data loss that occurs when transmitting images. By reducing the information that is needed for restoration, it efficiently transmits UHD images. NUC is a method that modulates the frequency according to the reception environment of high definition images. It is a necessary technology to improve the efficiency of image transmissions for the next-generation UHD TV broadcasting. –

## **NXP-Freescale merger nears completion**

While waiting for regulatory approvals in China and in the United States, the pending acquisition of Freescale by NXP remains "on track," according to Steve Wainwright, general manager of EMEA (Europe, the Middle East and Africa), vice president, sales and marketing at Freescale Semiconductor.

Speaking with EE Times at Freescale's event "Designing with Freescale," Wainwright was upbeat about the opportunity for the merged entity. NXP will become the world's fourth largest non-memory semiconductor company, after Intel, Texas Instruments and Broadcom; and will become the world's biggest automotive semiconductor supplier.

Last month, the European Commission approved NXP's acquisition of Freescale, subject to the divestment of NXP's radio frequency power business.

## **AMD to relieve 5% of global employees**

AMD recently adopted a restructuring plan to help improve its poor fiscal results. This calls for the delivery of pink slips to 5 per cent of the company's global workforce.

AMD has 9,469 employees as of June 2015 and will cut approximately 470 positions. The restructuring plan will target "all sites, all levels, all functions," an AMD spokesperson said, adding that engineers will represent a smaller portion of layoffs. Cuts will mostly come from sales, marketing and operations segments.

In the first half of this year, AMD slipped from IHS' top 20 semiconductor vendors list after six consecutive quarterly losses. The company expects to save approximately \$9 million in 2015 and \$58 million in 2016 following job cuts and restructuring.