

## Electronic applications of 2D materials

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### Abstract

The promise of 2D materials remains high for electronics as the challenges in growth and integration on a Si device platform are being solved. An energy efficient 2D transistor outperforming the MOSFET is feasible and substantial progress has been made in this direction. Surprising advances in ionic polymer/2D semiconductor and ferroelectric/2D semiconductor heterojunctions are revealing new directions for electronic applications including analog memories for use in synaptic weight storage in deep learning systems and in reconfigurable technology.

### Bionote



**Alan Seabaugh** is the Frank Freimann Professor of Electrical Engineering at the University of Notre Dame and Director of the STARnet Center for Low Energy Systems Technology. He received the Ph.D. in Electrical Engineering from the University of Virginia, Charlottesville, in 1985 and joined the University of Notre Dame in 1999, following positions at the National Bureau of Standards (1979-1986), Texas Instruments Incorporated (1986-1997), and Raytheon Systems Company (1997-1999). He has authored/coauthored more than 300 papers and holds 24 U.S. patents. He served as editor for the IEEE Transactions on Electron Devices (2010-2015) and is an IEEE Fellow.