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Announcements

Top Stories

Your APL articles are big news! We aggregate all the Press Releases for APL articles into one convenient location. See what's making Headlines!

- An optical technique for fast and ultrasensitive detection of ammonia using magnetic nanofluids
- Origin of 1/f noise in graphene multilayers: Surface vs. volume
- A neutron spin echo resolved grazing incidence scattering study of crystallites in organic photovoltaic thin films

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Upcoming Events

2013 MRS Spring Meeting & Exhibit: 1-5 April 2013
 APL will be represented by AIP Publishing at the 2013 MRS Spring Meeting & Exhibit, San Francisco, CA. Stop by booth #600 to learn more about the journal.

Editor's Picks of Most Recent Articles

A collection of fifty of the many notable APL articles from 2009 through August 2012, that the Editor has selected to showcase ongoing innovative research activities.

APL's 50th Anniversary Celebration:

APL's 50th Anniversary Reception and Symposium | The fifty most highly cited papers | Editorial: "Highlights of the 50-year history of Applied Physics Letters" | [Read the Announcement](#)

Did you know? APL-OEP articles freely available online!

APL: *Organic Electronics and Photonics* (APL-OEP) is a compilation of the hottest research in organic electronics and photonics. The spotlight journal is a subset of *Applied Physics Letters*. Articles presented in APL-OEP are freely available to the research community at apl-oep.aip.org.

[Read Research Highlights](#)

Applied Physics Letters retains top spot as most highly cited journal in Applied Physics

Journal metrics just released by Thomson Reuters*, once again show *Applied Physics Letters* (APL) to be the most highly cited journal tracked in the Applied Physics category, with 203,336 citations in 2011.

IMPACT FACTOR: 3.844
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*2011 Journal Citation Reports® (Thomson Reuters, 2012)

- **Thank You to Reviewers**
 The Editor, the Associate Editors, and the Editorial Board Members would like to extend our sincere appreciation to the efforts of the physics community for their rigorous and thoughtful reviews keep the journal at a high level.

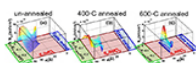
Author Podcast



Nick Holonyak Jr.: Father of the Visible LED
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- **Check out these new topical areas recently added to the Table of Contents since Jan 2012:** Energy Conversion and Storage, Multiferroics, Spintronics, Superconducting Electronics, and Surfaces and Interfaces
- APL welcomes the new members for the APL Editorial Board.
- **The 2012 Nobel Prize in Physics**
 The American Institute of Physics congratulates this year's Nobel Laureates in Physics, Serge

Research Highlights

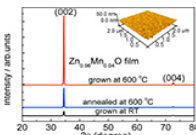


Study of gate oxide traps in HfO₂/AlGa/GaN metal-oxide-semiconductor high-electron-mobility transistors by use of ac transconductance method

X. Sun, O. I. Saadat, K. S. Chang-Liao, T. Palacios, S. Cui, and T. P. Ma

The authors introduce an ac-transconductance method to profile the gate oxide traps in a HfO₂ gated AlGa/GaN Metal-Oxide-Semiconductor High-Electron-Mobility Transistors (MOS-HEMTs) that can exchange carriers with metal gates, which in turn causes changes in analog and pulsed channel currents. The method extracts energy and spatial distributions of the oxide and interface traps under the gate from the frequency dependence of ac transconductance.

[Appl. Phys. Lett. 102, 103504 \(2013\) | HTML | PDF](#)

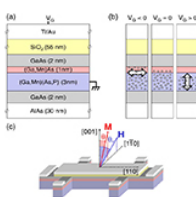


Effect of the magnetic order on the room-temperature band-gap of Mn-doped ZnO thin films

X. L. Wang, C. Y. Luan, Q. Shao, A. Pruna, C. W. Leung, R. Lortz, J. A. Zapfen, and A. Ruotolo

Exchange interaction between localized magnetic moments mediated by free charge carriers is responsible for a non-monotonic dependence of the low-temperature energy band-gap in dilute magnetic semiconductors. The authors found that in weakly doped Mn-ZnO films, increasing the exchange interaction by increasing the concentration of free charge carriers results in a red-shift of the near-band-edge emission peak at room temperature.

[Appl. Phys. Lett. 102, 102112 \(2013\) | HTML | PDF](#)

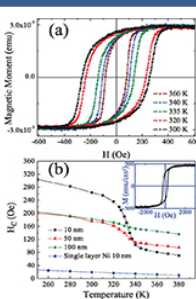


Electric-field control of the magnetic anisotropy in an ultrathin (Ga,Mn)As/(Ga,Mn)(As,P) bilayer

T. Niazi, M. Cormier, D. Lucot, L. Largeau, V. Jeudy, J. Cibert, and A. Lemaitre

The authors report on the electric control of the magnetic anisotropy in an ultrathin ferromagnetic (Ga,Mn)As/(Ga,Mn)(As,P) bilayer with competing in-plane and out-of-plane anisotropies. The carrier distribution and therefore the strength of the effective anisotropy are controlled by the gate voltage of a field effect device.

[Appl. Phys. Lett. 102, 122403 \(2013\) | HTML | PDF](#)

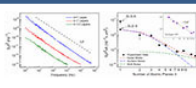


Control of magnetism across metal to insulator transitions

J. de la Venta, Siming Wang, J. G. Ramirez, and Ivan K. Schuller

Magnetic properties (coercivity and magnetization) of ferromagnetic films are strongly affected by the proximity to materials that undergo a metal to insulator transition. The authors show that stress associated with structural changes across the metal-insulator phase transition in VO₂ and V₂O₃ produces a magnetoelastic anisotropy in ferromagnetic films (Co and Ni) deposited on top of the oxides.

[Appl. Phys. Lett. 102, 122404 \(2013\) | HTML | PDF](#)



Origin of 1/f noise in graphene multilayers: Surface vs. volume

Guanxiong Liu, Sergey Ruyntsev, Michael S. Shur, and Alexander A. Balandin

A long-standing question is whether 1/f noise is generated on the surface of electrical conductors or inside their volumes. Unlike the thickness of metal or semiconductor films, the

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