



Procedure for fabricating vertically oriented angstrom gaps for optical purposes, using graphene as spacer. From left to right: photolithography, single-layer graphene growth, metal deposition and peeling off. Selected for an Editors' Suggestion. [Y.-M. Bahk *et al.*, Phys. Rev. Lett. **115**, 125501 (2015)]

NEWSPAPER

PHYSICAL REVIEW LETTERS™

Contents

Articles published 12 September–18 September 2015

VOLUME 115, NUMBER 12

18 September 2015

General Physics: Statistical and Quantum Mechanics, Quantum Information, etc.

- Improving the Precision of Weak Measurements by Postselection Measurement 120401
Shengshi Pang and Todd A. Brun
- Majorana Braiding with Thermal Noise 120402
Fabio L. Pedrocchi and David P. DiVincenzo
- Landauer's Principle in Multipartite Open Quantum System Dynamics 120403
S. Lorenzo, R. McCloskey, F. Ciccarello, M. Paternostro, and G. M. Palma
- Nonclassicality of Temporal Correlations 120404
Stephen Brierley, Adrian Kosowski, Marcin Markiewicz, Tomasz Paterek, and Anna Przysiężna
- ✂ Quasilocally Conserved Operators in the Isotropic Heisenberg Spin-1/2 Chain 120601
Enej Ilievski, Marko Medenjak, and Tomaž Prosen
- Universality at Breakdown of Quantum Transport on Complex Networks 120602
Nikolaj Kulvelis, Maxim Dolgushev, and Oliver Mülken

Gravitation and Astrophysics

- High-Energy Cosmic Ray Self-Confinement Close to Extra-Galactic Sources 121101
Pasquale Blasi, Elena Amato, and Marta D'Angelo
- Fast and Accurate Prediction of Numerical Relativity Waveforms from Binary Black Hole Coalescences
Using Surrogate Models 121102
Jonathan Blackman, Scott E. Field, Chad R. Galley, Béla Szilágyi, Mark A. Scheel,
Manuel Tiglio, and Daniel A. Hemberger
- ✂ Dispersion Distance and the Matter Distribution of the Universe in Dispersion Space 121301
Kiyoshi Wesley Masui and Kris Sigurdson

Elementary Particles and Fields

- New Exact Quantization Condition for Toric Calabi-Yau Geometries 121601
Xin Wang, Guojun Zhang, and Min-xin Huang
- ✂ Entanglement Entropy in Two-Dimensional String Theory 121602
Sean A. Hartnoll and Edward A. Mazenc
- Loop Integrands for Scattering Amplitudes from the Riemann Sphere 121603
Yvonne Geyer, Lionel Mason, Ricardo Monteiro, and Piotr Tourkine
- First Observation of CP Violation in $\bar{B}^0 \rightarrow D_{CP}^{(*)} h^0$ Decays by a Combined Time-Dependent Analysis of *BABAR* and Belle Data 121604
A. Abdesselam *et al.* (*BABAR* and Belle Collaborations)
- Twin Higgs Asymmetric Dark Matter 121801
Isabel García García, Robert Lasenby, and John March-Russell
- ✂ Discovery of τ Neutrino Appearance in the CNGS Neutrino Beam with the OPERA Experiment 121802
N. Agafonova *et al.* (OPERA Collaboration)

(Continued Inside)

✂ Selected for a Viewpoint in *Physics*. Please visit <http://physics.aps.org/>.

By suggesting a few manuscripts each week, we hope to promote reading across fields. Please see our Announcement Phys. Rev. Lett. 98, 010001 (2007).

Copyright 2015 American Physical Society



Contents (Continued)

Search for Nucleon and Dinucleon Decays with an Invisible Particle and a Charged Lepton in the Final State at the Super-Kamiokande Experiment	121803
V. Takhistov <i>et al.</i> (The Super-Kamiokande Collaboration)	
Minimal Left-Right Symmetric Dark Matter	121804
Julian Heeck and Sudhanwa Patra	
New Exotic Meson and Baryon Resonances from Doubly Heavy Hadronic Molecules	122001
Marek Karliner and Jonathan L. Rosner	
Nuclear Physics	
Precision Nucleon-Nucleon Potential at Fifth Order in the Chiral Expansion	122301
E. Epelbaum, H. Krebs, and U.-G. Meißner	
Atomic, Molecular, and Optical Physics	
Scaling Laws of the Two-Electron Sum-Energy Spectrum in Strong-Field Double Ionization	123001
Difa Ye, Min Li, Libin Fu, Jie Liu, Qihuang Gong, Yunquan Liu, and J. Ullrich	
Joint Measurements of Terahertz Wave Generation and High-Harmonic Generation from Aligned Nitrogen Molecules Reveal Angle-Resolved Molecular Structures	123002
Yindong Huang, Chao Meng, Xiaowei Wang, Zhihui Lü, Dongwen Zhang, Wenbo Chen, Jing Zhao, Jianmin Yuan, and Zengxiu Zhao	
Light-Dressing Effect in Laser-Assisted Elastic Electron Scattering by Xe	123201
Yuya Morimoto, Reika Kanya, and Kaoru Yamanouchi	
☞ Coulomb Bound States of Strongly Interacting Photons	123601
M. F. Maghrebi, M. J. Gullans, P. Bienias, S. Choi, I. Martin, O. Firstenberg, M. D. Lukin, H. P. Büchler, and A. V. Gorshkov	
Nonlinear Dynamics, Fluid Dynamics, Classical Optics, etc.	
Wake-Driven Dynamics of Finite-Sized Buoyant Spheres in Turbulence	124501
Varghese Mathai, Vivek N. Prakash, Jon Brons, Chao Sun, and Detlef Lohse	
Plasma and Beam Physics	
Absolute Instability near the Band Edge of Traveling-Wave Amplifiers	124801
D. M. H. Hung, I. M. Rittersdorf, P. Zhang, D. Chernin, Y. Y. Lau, T. M. Antonsen, J. W. Luginsland, D. H. Simon, and R. M. Gilgenbach	
Quasiperpendicular High Mach Number Shocks	125001
A. H. Sulaiman, A. Masters, M. K. Dougherty, D. Burgess, M. Fujimoto, and G. B. Hospodarsky	
Condensed Matter: Structure, etc.	
Spatial Patterns in Rydberg Excitations from Logarithmic Pair Interactions	125301
Wolfgang Lechner and Peter Zoller	
Impurity in a Bose-Einstein Condensate and the Efimov Effect	125302
Jesper Levinsen, Meera M. Parish, and Georg M. Bruun	
☞ Electromagnetic Saturation of Angstrom-Sized Quantum Barriers at Terahertz Frequencies	125501
Young-Mi Bahk, Bong Joo Kang, Yong Seung Kim, Joon-Yeon Kim, Won Tae Kim, Tae Yun Kim, Taehee Kang, Jiyeah Rhie, Sanghoon Han, Cheol-Hwan Park, Fabian Rotermund, and Dai-Sik Kim	
Condensed Matter: Electronic Properties, etc.	
Fractional Chern Insulators in Harper-Hofstadter Bands with Higher Chern Number	126401
Gunnar Möller and Nigel R. Cooper	

(Continued on Preceding Page)



Selected for a Viewpoint in *Physics*. Please visit <http://physics.aps.org/>.

By suggesting a few manuscripts each week, we hope to promote reading across fields. Please see our Announcement Phys. Rev. Lett. 98, 010001 (2007)

	Observation of the Zero Hall Plateau in a Quantum Anomalous Hall Insulator	126801
	Yang Feng, Xiao Feng, Yunbo Ou, Jing Wang, Chang Liu, Liguang Zhang, Dongyang Zhao, Gaoyuan Jiang, Shou-Cheng Zhang, Ke He, Xucun Ma, Qi-Kun Xue, and Yayu Wang	
	Electrical Tuning of Exciton Binding Energies in Monolayer WS ₂	126802
	Alexey Chernikov, Arend M. van der Zande, Heather M. Hill, Albert F. Rigosi, Ajanth Velauthapillai, James Hone, and Tony F. Heinz	
	Dirac Semimetals in Two Dimensions	126803
	Steve M. Young and Charles L. Kane	
	Charge Number Dependence of the Dephasing Rates of a Graphene Double Quantum Dot in a Circuit QED Architecture	126804
	Guang-Wei Deng, Da Wei, J. R. Johansson, Miao-Lei Zhang, Shu-Xiao Li, Hai-Ou Li, Gang Cao, Ming Xiao, Tao Tu, Guang-Can Guo, Hong-Wen Jiang, Franco Nori, and Guo-Ping Guo	
	Fractional Quantum Hall States at $\nu = 13/5$ and $12/5$ and Their Non-Abelian Nature	126805
	W. Zhu, S. S. Gong, F. D. M. Haldane, and D. N. Sheng	
	Alloy Engineering of Defect Properties in Semiconductors: Suppression of Deep Levels in Transition-Metal Dichalcogenides	126806
	Bing Huang, Mina Yoon, Bobby G. Sumpter, Su-Huai Wei, and Feng Liu	
	Enhanced Bulk-Edge Coulomb Coupling in Fractional Fabry-Perot Interferometers	126807
	C. W. von Keyserlingk, S. H. Simon, and Bernd Rosenow	
	Semiconductor-Nanowire-Based Superconducting Qubit	127001
	T. W. Larsen, K. D. Petersson, F. Kuemmeth, T. S. Jespersen, P. Krogstrup, J. Nygård, and C. M. Marcus	
	Realization of Microwave Quantum Circuits Using Hybrid Superconducting-Semiconducting Nanowire Josephson Elements	127002
	G. de Lange, B. van Heck, A. Bruno, D. J. van Woerkom, A. Geresdi, S. R. Plissard, E. P. A. M. Bakkers, A. R. Akhmerov, and L. DiCarlo	
	Bound States of a Ferromagnetic Wire in a Superconductor	127003
	Jay D. Sau and P. M. R. Brydon	
	Charge-Induced Spin Torque in Anomalous Hall Ferromagnets	127201
	Kentaro Nomura and Daichi Kurebayashi	
	Spin Fluctuations from Hertz to Terahertz on a Triangular Lattice	127202
	Yusuke Nambu, Jason S. Gardner, Douglas E. MacLaughlin, Chris Stock, Hitoshi Endo, Seth Jonas, Taku J. Sato, Satoru Nakatsuji, and Collin Broholm	
	Optical Diode Effect at Spin-Wave Excitations of the Room-Temperature Multiferroic BiFeO ₃	127203
	I. Kézsmárki, U. Nagel, S. Bordács, R. S. Fishman, J. H. Lee, Hee Taek Yi, S.-W. Cheong, and T. Rõhm	
	Melting of Three-Sublattice Order in Easy-Axis Antiferromagnets on Triangular and Kagome Lattices	127204
	Kedar Damle	
	Direct Observation of a Localized Magnetic Soliton in a Spin-Transfer Nanocontact	127205
	D. Backes, F. Macià, S. Bonetti, R. Kukreja, H. Ohldag, and A. D. Kent	
	Polymer, Soft Matter, Biological, and Interdisciplinary Physics	
	Dynamic Weakening by Acoustic Fluidization during Stick-Slip Motion	128001
	F. Giacco, L. Saggese, L. de Arcangelis, E. Lippiello, and M. Pica Ciamarra	
	Subdominant Dense Clusters Allow for Simple Learning and High Computational Performance in Neural Networks with Discrete Synapses	128101
	Carlo Baldassi, Alessandro Ingrosso, Carlo Lucibello, Luca Saglietti, and Riccardo Zecchina	
	Multiscale Stick-Slip Dynamics of Adhesive Tape Peeling	128301
	Marie-Julie Dalbe, Pierre-Philippe Cortet, Matteo Ciccotti, Loïc Vanel, and Stéphane Santucci	

(Continued on Preceding Page)



Selected for a Viewpoint in *Physics*. Please visit <http://physics.aps.org/>.

By suggesting a few manuscripts each week, we hope to promote reading across fields. Please see our Announcement Phys. Rev. Lett. 98, 010001 (2007)

Contents (Continued)

Validity of the Stokes-Einstein Relation in Soft Colloids up to the Glass Transition	128302
Sudipta Gupta, Jörg Stellbrink, Emanuela Zaccarelli, Christos N. Likos, Manuel Camargo, Peter Holmqvist, Jürgen Allgaier, Lutz Willner, and Dieter Richter	
Ellipsoidal Relaxation of Deformed Vesicles	128303
Miao Yu, Rafael B. Lira, Karin A. Riske, Rumiana Dimova, and Hao Lin	



Selected for a Viewpoint in *Physics*. Please visit <http://physics.aps.org/>.

By suggesting a few manuscripts each week, we hope to promote reading across fields. Please see our Announcement Phys. Rev. Lett. 98, 010001 (2007).

Physics
spotlighting exceptional research

The American Physical Society's free online publication, *Physics* (<http://physics.aps.org/>), provides thought-provoking analysis and spotlights exceptional research.