

# CONTENTS - *Continued*

PHYSICAL REVIEW B

THIRD SERIES, VOLUME 78, NUMBER 12

SEPTEMBER 2008-15(II)

|                                                                                                                                                                      |        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| Zitterbewegung of electrons in graphene in a magnetic field ( <i>9 pages</i> ) . . . . .                                                                             | 125419 |
| Tomasz M. Rusin and Wlodek Zawadzki                                                                                                                                  |        |
| High-pressure Raman response of single-walled carbon nanotubes: Effect of the excitation laser energy ( <i>6 pages</i> ) . . . . .                                   | 125420 |
| Ahmad J. Ghandour, David J. Dunstan, Andrei Sapelkin, John E. Proctor, and Matthew P. Halsall                                                                        |        |
| Effect of ZnS shell formation on the confined energy levels of ZnSe quantum dots ( <i>8 pages</i> ) . . . . .                                                        | 125421 |
| Amit D. Lad and Shailaja Mahamuni                                                                                                                                    |        |
| Substrate-enhanced O <sub>2</sub> adsorption and complexity in the Raman <i>G</i> -band spectra of individual metallic carbon nanotubes ( <i>7 pages</i> ) . . . . . | 125422 |
| Anshu Gaur and Moonsub Shim                                                                                                                                          |        |
| Modeling of quantum point contacts in high magnetic fields and with current bias outside the linear response regime ( <i>15 pages</i> ) . . . . .                    | 125423 |
| S. Arslan, E. Cicek, D. Eksi, S. Aktas, A. Weichselbaum, and A. Siddiki                                                                                              |        |

## ERRATA

|                                                                                                                                                                 |           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| Publisher's Note: Quantum many-body theory of qubit decoherence in a finite-size spin bath [Phys. Rev. B <b>78</b> , 085315 (2008)] ( <i>1 page</i> ) . . . . . | 129901(E) |
| Wen Yang and Ren-Bao Liu                                                                                                                                        |           |

# CONTENTS - Continued

PHYSICAL REVIEW B

THIRD SERIES, VOLUME 78, NUMBER 12

SEPTEMBER 2008-15(II)

|                                                                                                                                                                                                  |        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| Controlling the fluorescence lifetime of a single emitter on the nanoscale using a plasmonic superlens<br>(7 pages) .....                                                                        | 125403 |
| L. S. Froufe-Pérez and R. Carminati                                                                                                                                                              |        |
| Angular magnetoresistance oscillations in quasi-one-dimensional organic conductors in the presence of a<br>crystal superstructure (10 pages) .....                                               | 125404 |
| Anand Banerjee and Victor M. Yakovenko                                                                                                                                                           |        |
| Size stability of nanostructures in Stranski-Krastanow systems under an electric field (18 pages) .....                                                                                          | 125405 |
| Zhijun Huang and Cheng-hsin Chiu                                                                                                                                                                 |        |
| Superstructures in arrays of rotated graphene layers: Electronic structure calculations (5 pages) .....                                                                                          | 125406 |
| Eduardo Cisternas, Marcos Flores, and Patricio Vargas                                                                                                                                            |        |
| Interaction of a 180° ferroelectric domain wall with a biased scanning probe microscopy tip: Effective wall<br>geometry and thermodynamics in Ginzburg-Landau-Devonshire theory (11 pages) ..... | 125407 |
| Anna N. Morozovska, Sergei V. Kalinin, Eugene A. Eliseev, Venkatraman Gopalan, and<br>Sergei V. Svechnikov                                                                                       |        |
| Non-Fourier heat transport in metal-dielectric core-shell nanoparticles under ultrafast laser pulse excitation<br>(8 pages) .....                                                                | 125408 |
| M. Rashidi-Huyeh, S. Volz, and B. Palpant                                                                                                                                                        |        |
| Inelastic scattering in a monolayer graphene sheet: A weak-localization study (5 pages) .....                                                                                                    | 125409 |
| Dong-Keun Ki, Dongchan Jeong, Jae-Hyun Choi, Hu-Jong Lee, and Kee-Su Park                                                                                                                        |        |
| Imaging optical near fields at metallic nanoscale voids (5 pages) .....                                                                                                                          | 125410 |
| P. D. Lacharmoise, N. G. Tognalli, A. R. Goñi, M. I. Alonso, A. Fainstein, R. M. Cole, J. J. Baumberg,<br>J. Garcia de Abajo, and P. N. Bartlett                                                 |        |
| Charge noise in single-electron transistors and charge qubits may be caused by metallic grains (7 pages) ....                                                                                    | 125411 |
| S. Kafanov, H. Brenning, T. Duty, and P. Delsing                                                                                                                                                 |        |
| Excitation of surface plasmon polaritons along the sinusoidal boundary of a metamaterial (11 pages) .....                                                                                        | 125412 |
| Mauro Cuevas and Ricardo A. Depine                                                                                                                                                               |        |
| Shape transformation of Pt nanoparticles induced by swift heavy-ion irradiation (8 pages) .....                                                                                                  | 125413 |
| R. Giuliani, P. Kluth, L. L. Araujo, D. J. Sprouster, A. P. Byrne, D. J. Cookson, and M. C. Ridgway                                                                                              |        |
| Impurity effects on the electronic structure of square quantum dots: A full configuration-interaction study<br>(12 pages) .....                                                                  | 125414 |
| Bhalchandra S. Pujari, Kavita Joshi, D. G. Kanhere, and S. A. Blundell                                                                                                                           |        |
| ☞ Hypothetical three-dimensional all- $sp^2$ carbon phase (5 pages) .....                                                                                                                        | 125415 |
| G.-M. Rignanese and J.-C. Charlier                                                                                                                                                               |        |
| Electron-capture decay rate of $^7\text{Be}$ @ $\text{C}_{60}$ by first-principles calculations based on density functional theory<br>(7 pages) .....                                            | 125416 |
| Tsuguo Morisato, Kaoru Ohno, Tsutomu Ohtsuki, Kentaro Hirose, Marcel Sluiter, and<br>Yoshiyuki Kawazoe                                                                                           |        |
| Theory of the broadening of vibrational spectra induced by lowered symmetry in yttria nanostructures<br>(7 pages) .....                                                                          | 125417 |
| H. Bao, X. L. Ruan, and M. Kaviany                                                                                                                                                               |        |
| Theory of resonant multiphonon Raman scattering in graphene (42 pages) .....                                                                                                                     | 125418 |
| D. M. Basko                                                                                                                                                                                      |        |

(Continued)

# CONTENTS - Continued

PHYSICAL REVIEW B

THIRD SERIES, VOLUME 78, NUMBER 12

SEPTEMBER 2008-15(II)

|                                                                                                                                                                                                          |        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| Deterministic photon entangler using a charged quantum dot inside a microcavity (5 pages) . . . . .                                                                                                      | 125318 |
| C. Y. Hu, W. J. Munro, and J. G. Rarity                                                                                                                                                                  |        |
| Correlating the microstructure of thin films of poly[5,5-bis(3-dodecyl-2-thienyl)-2,2-bithiophene] with charge transport: Effect of dielectric surface energy and thermal annealing (18 pages) . . . . . | 125319 |
| Leslie H. Jimison, Alberto Salleo, Michael L. Chabinyc, David P. Bernstein, and Michael F. Toney                                                                                                         |        |
| Inelastic transport in the Coulomb blockade regime within a nonequilibrium atomic limit (9 pages) . . . . .                                                                                              | 125320 |
| Michael Galperin, Abraham Nitzan, and Mark A. Ratner                                                                                                                                                     |        |
| Exciton fine structure in strain-free GaAs/Al <sub>0.3</sub> Ga <sub>0.7</sub> As quantum dots: Extrinsic effects (4 pages) . . . . .                                                                    | 125321 |
| M. Abbarchi, C. A. Mastrandrea, T. Kuroda, T. Mano, K. Sakoda, N. Koguchi, S. Sanguinetti, A. Vinattieri, and M. Gurioli                                                                                 |        |
| Monte Carlo study of particle renormalizations in the presence of dissipative environments (7 pages) . . . . .                                                                                           | 125322 |
| Victor Kagalovsky and Baruch Horovitz                                                                                                                                                                    |        |
| Fractional quantum Hall hierarchy and the second Landau level (10 pages) . . . . .                                                                                                                       | 125323 |
| Parsa Bonderson and J. K. Slingerland                                                                                                                                                                    |        |
| Optical probing of spin fluctuations of a single paramagnetic Mn atom in a semiconductor quantum dot (9 pages) . . . . .                                                                                 | 125324 |
| L. Besombes, Y. Leger, J. Bernos, H. Boukari, H. Mariette, J. P. Poizat, T. Clement, J. Fernández-Rossier, and R. Aguado                                                                                 |        |
| Carrier multiplication yields in PbS and PbSe nanocrystals measured by transient photoluminescence (10 pages) . . . . .                                                                                  | 125325 |
| Gautham Nair, Scott M. Geyer, Liang-Yi Chang, and Mouni G. Bawendi                                                                                                                                       |        |
| Microcavity exciton-polariton mediated Raman scattering: Experiments and theory (10 pages) . . . . .                                                                                                     | 125326 |
| A. Bruchhausen, L. M. León Hilario, A. A. Aligia, A. M. Lobos, A. Fainstein, B. Jusserand, and R. André                                                                                                  |        |
| Spin polarizations and spin Hall currents in a two-dimensional electron gas with magnetic impurities (5 pages) . . . . .                                                                                 | 125327 |
| C. Gorini, P. Schwab, M. Dzierzawa, and R. Raimondi                                                                                                                                                      |        |
| ☞ Spin filtering by a periodic spintronic device (5 pages) . . . . .                                                                                                                                     | 125328 |
| Amnon Aharony, Ora Entin-Wohlman, Yasuhiro Tokura, and Shingo Katsumoto                                                                                                                                  |        |
| Structure of the GaP(001)-4 × 2-In surface investigated with LEED, STM, photoelectron spectroscopy, and <i>ab initio</i> calculations (5 pages) . . . . .                                                | 125329 |
| M. Shimomura, D. Ichikawa, G. P. Srivastava, K. Z. Liu, and Y. Fukuda                                                                                                                                    |        |
| Gated-charge force microscopy for imaging a surface-acoustic-wave-induced charge in a depleted one-dimensional channel (4 pages) . . . . .                                                               | 125330 |
| R. Crook, R. J. Schneble, M. Kataoka, H. E. Beere, D. A. Ritchie, D. Anderson, G. A. C. Jones, C. G. Smith, C. J. B. Ford, and C. H. W. Barnes                                                           |        |
| <b>Surface physics, nanoscale physics, low-dimensional systems</b>                                                                                                                                       |        |
| ☞ Long-range correlations in disordered graphene (12 pages) . . . . .                                                                                                                                    | 125401 |
| K. Ziegler                                                                                                                                                                                               |        |
| Additional levels between Landau bands due to vacancies in graphene: Towards defect engineering (5 pages) . . . . .                                                                                      | 125402 |
| A. L. C. Pereira and P. A. Schulz                                                                                                                                                                        |        |

(Continued)

☞ The editors and referees of PRB find these papers to be of particular interest, importance, or clarity. Please see our Announcement Phys. Rev. B 77, 130001 (2008).

**Semiconductors II: surfaces, interfaces, microstructures, and related topics**

|                                                                                                                                                                              |        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| Influence of residual disorder on the anticrossing of Bloch modes probed in $k$ space (8 pages) . . . . .                                                                    | 125301 |
| N. Le Thomas, V. Zabelin, R. Houdré, M. V. Kotlyar, and T. F. Krauss                                                                                                         |        |
| Microscopies of disordered two-dimensional electron gases under high magnetic fields: Equilibrium properties and dissipation in the hydrodynamic regime (24 pages) . . . . . | 125302 |
| Thierry Champel, Serge Florens, and Léonie Canet                                                                                                                             |        |
| Theory of the excitation of the vibrational mode of an adatom-substrate system under a resonant laser field (13 pages) . . . . .                                             | 125303 |
| Jie Ma (马杰), Enge Wang (王恩哥), Zhenyu Zhang (张振宇), and Biao Wu (吴飙)                                                                                                           |        |
| Magnetic oscillations of resistivity and absorption of radiation in quantum wells with two populated subbands (14 pages) . . . . .                                           | 125304 |
| O. E. Raichev                                                                                                                                                                |        |
| Diamagnetic persistent currents for electrons in ballistic billiards subject to a point flux (10 pages) . . . . .                                                            | 125305 |
| Oleksandr Zelyak and Ganpathy Murthy                                                                                                                                         |        |
| Magnetoconductance of rectangular arrays of quantum rings (10 pages) . . . . .                                                                                               | 125306 |
| Orsolya Kálmán, Péter Földi, Mihály G. Benedict, and F. M. Peeters                                                                                                           |        |
| Half-metallicity in europium oxide conductively matched with silicon (6 pages) . . . . .                                                                                     | 125307 |
| Raghava P. Panguluri, T. S. Santos, E. Negusse, J. Dvorak, Y. Idzerda, J. S. Moodera, and B. Nadgorny                                                                        |        |
| Resonance fluorescence in driven quantum dots: Electron and photon correlations (19 pages) . . . . .                                                                         | 125308 |
| Rafael Sánchez, Gloria Platero, and Tobias Brandes                                                                                                                           |        |
| Kinetics of spin coherence of electrons in $n$ -type InAs quantum wells under intense terahertz laser fields (16 pages) . . . . .                                            | 125309 |
| J. H. Jiang, M. W. Wu, and Y. Zhou                                                                                                                                           |        |
| Theoretical determination of stable fourfold coordinated vacancy clusters in silicon (6 pages) . . . . .                                                                     | 125310 |
| Sangheon Lee and Gyeong S. Hwang                                                                                                                                             |        |
| Resonant energy transfer in quantum dots: Frequency-domain luminescent spectroscopy (13 pages) . . . . .                                                                     | 125311 |
| S. Yu. Kruchinin, A. V. Fedorov, A. V. Baranov, T. S. Perova, and K. Berwick                                                                                                 |        |
| Spin-magnetophonon level splitting in semimagnetic quantum wells (12 pages) . . . . .                                                                                        | 125312 |
| V. L. Gurevich and M. I. Muradov                                                                                                                                             |        |
| Temperature and magnetic-field dependence of the quantum corrections to the conductance of a network of quantum dots (21 pages) . . . . .                                    | 125313 |
| Joern N. Kupferschmidt and Piet W. Brouwer                                                                                                                                   |        |
| Entanglement generation via a completely mixed nuclear spin bath (5 pages) . . . . .                                                                                         | 125314 |
| H. Christ, J. I. Cirac, and G. Giedke                                                                                                                                        |        |
| Quantum condensation in electron-hole plasmas (12 pages) . . . . .                                                                                                           | 125315 |
| D. Kremp, D. Semkat, and K. Henneberger                                                                                                                                      |        |
| Fractionalized quantum spin Hall effect (6 pages) . . . . .                                                                                                                  | 125316 |
| Michael W. Young, Sung-Sik Lee, and Catherine Kallin                                                                                                                         |        |
| Nanosopic recombination processes in InGaN/GaN quantum wells emitting violet, blue, and green spectra (7 pages) . . . . .                                                    | 125317 |
| A. Kaneta, M. Funato, and Y. Kawakami                                                                                                                                        |        |

(Continued)

# CONTENTS - *Continued*

PHYSICAL REVIEW B

THIRD SERIES, VOLUME 78, NUMBER 12

SEPTEMBER 2008-15(II)

|                                                                                                                                                                                                                                     |        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| From itinerant to local-moment antiferromagnetism in Kondo lattices: Adiabatic continuity versus quantum phase transitions ( <i>8 pages</i> ) . . . . .                                                                             | 125109 |
| Matthias Vojta                                                                                                                                                                                                                      |        |
| ☞ Metal-insulator transition in manganites: Changes in optical conductivity up to 22 eV ( <i>5 pages</i> ) . . . . .                                                                                                                | 125110 |
| A. Rusydi, R. Rauer, G. Neuber, M. Bastjan, I. Mahns, S. Müller, P. Saichu, B. Schulz, S. G. Singer, A. I. Lichtenstein, D. Qi, X. Gao, X. Yu, A. T. S. Wee, G. Stryganyuk, K. Dörr, G. A. Sawatzky, S. L. Cooper, and M. Rübhausen |        |
| Electronic structure of alkali-metal fluorides, oxides, and nitrides: Density-functional calculations including self-interaction corrections ( <i>9 pages</i> ) . . . . .                                                           | 125111 |
| Björn Baumeier, Peter Krüger, Johannes Pollmann, and Grigori V. Vajenine                                                                                                                                                            |        |
| Optically generated small electron and hole polarons in nominally undoped and Fe-doped KNbO <sub>3</sub> investigated by transient absorption spectroscopy ( <i>8 pages</i> ) . . . . .                                             | 125112 |
| S. Torbrügge, M. Imlau, B. Schoke, C. Merschjann, O. F. Schirmer, S. Vernay, A. Gross, V. Wesemann, and D. Rytz                                                                                                                     |        |
| Cylindrical superlens by a coordinate transformation ( <i>7 pages</i> ) . . . . .                                                                                                                                                   | 125113 |
| Min Yan, Wei Yan, and Min Qiu                                                                                                                                                                                                       |        |
| Breakdown of the Fermi-liquid regime in the two-dimensional Hubbard model from a two-loop field-theoretical renormalization group approach ( <i>8 pages</i> ) . . . . .                                                             | 125114 |
| Hermann Freire, Eberth Correa, and Alvaro Ferraz                                                                                                                                                                                    |        |
| Spin-charge separation in strongly interacting finite ladder rings ( <i>4 pages</i> ) . . . . .                                                                                                                                     | 125115 |
| Julián Rincón, K. Hallberg, and A. A. Aligia                                                                                                                                                                                        |        |
| Approximation to density functional theory for the calculation of band gaps of semiconductors ( <i>9 pages</i> ) . . . .                                                                                                            | 125116 |
| Luiz G. Ferreira, Marcelo Marques, and Lara K. Teles                                                                                                                                                                                |        |
| <b>Semiconductors I: bulk</b>                                                                                                                                                                                                       |        |
| Optoelectronic bistability effect in semiconductors ( <i>8 pages</i> ) . . . . .                                                                                                                                                    | 125201 |
| Stefano Lagomarsino                                                                                                                                                                                                                 |        |
| Spin-polarized tunneling through potential barriers at ferromagnetic metal/semiconductor Schottky contacts ( <i>7 pages</i> ) . . . . .                                                                                             | 125202 |
| D. L. Smith and P. P. Ruden                                                                                                                                                                                                         |        |
| Ultrafast electron cascades in semiconductors driven by intense femtosecond terahertz pulses ( <i>6 pages</i> ) . . . . .                                                                                                           | 125203 |
| H. Wen, M. Wiczer, and A. M. Lindenberg                                                                                                                                                                                             |        |
| Competing intermediates in the pressure-induced wurtzite to rocksalt phase transition in ZnO ( <i>7 pages</i> ) . . . . .                                                                                                           | 125204 |
| Salah Eddine Boulfelfel and Stefano Leoni                                                                                                                                                                                           |        |
| Thermoelectric performance of lanthanum telluride produced via mechanical alloying ( <i>12 pages</i> ) . . . . .                                                                                                                    | 125205 |
| Andrew F. May, Jean-Pierre Fleurial, and G. Jeffrey Snyder                                                                                                                                                                          |        |
| Interacting excitons described by an infinite series of composite-exciton operators ( <i>11 pages</i> ) . . . . .                                                                                                                   | 125206 |
| M. Combescot and O. Betbeder-Matibet                                                                                                                                                                                                |        |
| Resonant hole polarons in GaAs and InP ( <i>7 pages</i> ) . . . . .                                                                                                                                                                 | 125207 |
| J. N. Heyman, Nelson Coates, Sheila Nabanja, Tobin Kaufman-Osborn, and Fedir Kyrychenko                                                                                                                                             |        |
| First-principles study of Fe and FeAl defects in SiGe alloys ( <i>10 pages</i> ) . . . . .                                                                                                                                          | 125208 |
| A. Carvalho, J. Coutinho, R. Jones, J. Goss, M. Barroso, and P. R. Briddon                                                                                                                                                          |        |

(Continued)