

PHYSICAL REVIEW B

For editorial and subscription correspondence,
please see inside front cover
(ISSN: 0163-1829)

PERIODICALS
Postmaster send address changes to:
American Institute of Physics
Suite 1NO1
2 Huntington Quadrangle
Melville, NY 11747-4502

THIRD SERIES, VOLUME 64, NUMBER 24

CONTENTS

15 DECEMBER 2001-II

Announcement: Electronic-First Publication and Article Numbers i

RAPID COMMUNICATIONS

Electronic structure: wide-band, narrow-band, and strongly correlated systems

- Theory of combined exciton-cyclotron resonance in a two-dimensional electron gas: The strong magnetic-field regime (*4 pages*) 241101(R)
A. B. Dzyubenko
- Intrinsic birefringence in calcium fluoride and barium fluoride (*4 pages*) 241102(R)
John H. Burnett, Zachary H. Levine, and Eric L. Shirley
- Charge excitations in LiV_2O_5 and NaV_2O_5 : Similarities and differences (*4 pages*) 241103(R)
A. Hübsch, C. Waidacher, and K. W. Becker
- Large thermoelectric power factor in TiS_2 crystal with nearly stoichiometric composition (*4 pages*) 241104(R)
H. Imai, Y. Shimakawa, and Y. Kubo

Semiconductors I: bulk

- Magnetic domains in III-V magnetic semiconductors (*4 pages*) 241201(R)
T. Dietl, Jürgen König, and A. H. MacDonald

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

- Statistical distribution of Coulomb blockade peak heights in adiabatically pumped quantum dots (*4 pages*) ... 241301(R)
M. Blaauboer and E.J. Heller
- Coherent superposition of photon- and phonon-assisted tunneling in coupled quantum dots (*4 pages*) 241302(R)
H. Qin, A. W. Holleitner, K. Eberl, and R. H. Blick
- Multifractality of wave functions at the quantum Hall transition revisited (*4 pages*) 241303(R)
F. Evers, A. Mildenberger, and A. D. Mirlin
- Defect-induced nonpolar-to-polar transition at the surface of chalcopyrite semiconductors (*4 pages*) 241304(R)
John E. Jaffe and Alex Zunger
- Existence of a phonon bottleneck for excitons in quantum dots (*4 pages*) 241305(R)
R. Heitz, H. Born, F. Guffarth, O. Stier, A. Schliwa, A. Hoffmann, and D. Bimberg
- Theoretical study of the structure of 1,5-cyclooctadiene on $\text{Si}(001)$ (*4 pages*) 241306(R)
Jun-Hyung Cho, Dong-Hwa Oh, and Leonard Kleinman
- High-field electrical transport and breakdown in bundles of single-wall carbon nanotubes (*4 pages*) 241307(R)
M. Radosavljević, J. Lefebvre, and A. T. Johnson
- Significant strain dependence of piezoelectric constants in $\text{In}_x\text{Ga}_{1-x}\text{N}/\text{GaN}$ quantum wells (*4 pages*) 241308(R)
G. Vaschenko, D. Patel, C. S. Menoni, N. F. Gardner, J. Sun, W. Götz, C. N. Tomé, and B. Clausen



Effects of disorder on the $\nu=1$ quantum Hall state (4 pages)	241309(R)
Ganpathy Murthy	
Magnetotransport through a strongly interacting quantum dot (4 pages)	241310(R)
T. A. Costi	

Surface physics, low-dimensional systems, and related topics

Ground-state geometry of small Ni-C clusters (4 pages)	241401(R)
George E. Froudakis, Max Mühlhäuser, Antonis N. Andriotis, and Madhu Menon	
Thermal expansion of single-walled carbon nanotube (SWNT) bundles: X-ray diffraction studies (3 pages) ...	241402(R)
Yutaka Maniwa, Ryuji Fujiwara, Hiroshi Kira, Hideki Tou, Hiromichi Kataura, Shinzo Suzuki, Yohji Achiba, Eiji Nishibori, Masaki Takata, Makoto Sakata, Akihiko Fujiwara, and Hiroyoshi Suematsu	
Locked twist in multiwalled carbon-nanotube ribbons (4 pages)	241403(R)
Min-Feng Yu, Mark J. Dyer, Jian Chen, Dong Qian, Wing Kam Liu, and Rodney S. Ruoff	
Self-organized two-dimensional lattice of magic clusters (4 pages)	241404(R)
M. Y. Lai and Y. L. Wang	

ARTICLES**Electronic structure: wide-band, narrow-band, and strongly correlated systems**

Ground state of electron gases at negative compressibility (6 pages)	245101
Adriaan M. J. Schakel	
From the local Fermi liquid to the heavy Fermi liquid (5 pages)	245102
Tetsuya Mutou	
Metal-insulator transition in two dimensions: Role of the upper Hubbard band (11 pages)	245103
V. I. Kozub and N. V. Agrinskaya	
Electronic decay of valence holes in clusters and condensed matter (10 pages)	245104
Robin Santra, Jürgen Zobeley, and Lorenz S. Cederbaum	
Fine structure in high-resolution photoemission spectra of quasi-two-dimensional 1T-TaS ₂ (4 pages)	245105
Th. Pillo, J. Hayoz, D. Naumović, H. Berger, L. Perfetti, L. Gavioli, A. Taleb-Ibrahimi, L. Schlapbach, and P. Aebi	
Nonlinear optical study of the Fermi-surface oscillation in gold induced by acoustic-phonon excitation (4 pages)	245106
Chunlei Guo and Antoinette J. Taylor	
Optical investigation of the electronic structures of Y ₂ Ru ₂ O ₇ , CaRuO ₃ , SrRuO ₃ , and Bi ₂ Ru ₂ O ₇ (6 pages)	245107
J. S. Lee, Y. S. Lee, T. W. Noh, K. Char, Jonghyurk Park, S.-J. Oh, J.-H. Park, C. B. Eom, T. Takeda, and R. Kanno	
Variational method for the generation of localized Wannier functions on the basis of Bloch functions (8 pages)	245108
V. P. Smirnov and D. E. Usvyat	
Electronic structure of oxygen-related defects in PbWO ₄ and CaMoO ₄ crystals (10 pages)	245109
Yonas B. Abraham, N. A. W. Holzwarth, R. T. Williams, G. Eric Matthews, and Alan R. Tackett	
Symmetry-resolved density of states from valence band photoelectron diffraction (5 pages)	245110
Ch. Søndergaard, Ch. Schultz, M. Schønning, S. Lizzit, A. Baraldi, S. Agergaard, M. B. Nielsen, H. Li, and Ph. Hofmann	
Thermal fluctuations, localization, and self-trapping in a polar crystal: Combined shell-model molecular dynamics and quantum chemical approach (13 pages)	245111
Jacob L. Gavartin and Alexander L. Shluger	

Image-potential band-gap narrowing at a metal/semiconductor interface (6 pages)	245112
Ryotaro Arita, Yoshiaki Tanida, Kazuhiko Kuroki, and Hideo Aoki	
Superprism effect in opal-based photonic crystals (7 pages)	245113
T. Ochiai and J. Sánchez-Dehesa	
Origin of the c/a variation in hexagonal close-packed divalent metals (10 pages)	245114
U. Häussermann and S. I. Simak	
P -wave pairing and ferromagnetism in the metal-insulator transition in two dimensions (12 pages)	245115
Claudio Chamon, Eduardo R. Mucciolo, and A. H. Castro Neto	
Charge spectrometry with a strongly coupled superconducting single-electron transistor (5 pages)	245116
C. P. Heij, P. Hadley, and J. E. Mooij	
$\Sigma 13$ (1014) twin in α -Al ₂ O ₃ : A model for a general grain boundary (11 pages)	245117
Stefano Fabris and Christian Elsässer	
Thermal transport in the Falicov-Kimball model (10 pages)	245118
J. K. Freericks and V. Zlatić	
Competition of random and periodic potentials in interacting fermionic systems and classical equivalents: The Mott glass (25 pages)	245119
T. Giamarchi, P. Le Doussal, and E. Orignac	
Semiconductors I: bulk	
Local vibrational mode spectroscopy of dimer and other oxygen-related defects in irradiated and thermally annealed germanium (6 pages)	245201
P. Vanmeerbeek and P. Clauws	
Coherent nonlinear pulse propagation on a free-exciton resonance in a semiconductor (10 pages)	245202
N. C. Nielsen, S. Linden, J. Kuhl, J. Förstner, A. Knorr, S. W. Koch, and H. Giessen	
Higher-order Coulomb correlation in the nonlinear optical response (8 pages)	245203
Thomas Östreich	
LDA, GW, and exact-exchange Kohn-Sham scheme calculations of the electronic structure of sp semiconductors (11 pages)	245204
Andrzej Fleszar	
Electronic structure and spin polarization of Mn-containing dilute magnetic III-V semiconductors (5 pages)	245205
Manish Jain, Leeor Kronik, James R. Chelikowsky, and Vitaliy V. Godlevsky	
<i>Ab initio</i> investigation of point defects in bulk Si and Ge using a cluster method (11 pages)	245206
Serdar Ögüt and James R. Chelikowsky	
Curie-temperature enhancement in ferromagnetic semiconductor superlattices (7 pages)	245207
I. Vurgaftman and J. R. Meyer	
<i>Ab initio</i> and empirical-potential studies of defect properties in 3C-SiC (7 pages)	245208
Fei Gao, Eric J. Bylaska, William J. Weber, and L. René Corrales	
Anisotropy of conduction band g values and interband momentum matrix elements in wurtzite GaN (7 pages)	245209
A. V. Rodina and B. K. Meyer	
Low-temperature recombination kinetics of photoexcited persistent charge carriers in conjugated polymer/fullerene composite films (7 pages)	245210
N. A. Schultz, M. C. Scharber, C. J. Brabec, and N. S. Sariciftci	
Electronic structure of the transparent p -type semiconductor (LaO)CuS (5 pages)	245211
Shin-ichiro Inoue, Kazushige Ueda, Hideo Hosono, and Noriaki Hamada	
Structure of the silicon vacancy in 6H-SiC after annealing identified as the carbon vacancy-carbon antisite pair (10 pages)	245212
Th. Lingner, S. Greulich-Weber, J.-M. Spaeth, U. Gerstmann, E. Rauls, Z. Hajnal, Th. Frauenheim, and H. Overhof	

Tin-vacancy complexes in silicon (9 pages)	245213
M. Kaukonen, R. Jones, S. Öberg, and P. R. Briddon	
Device-size atomistic models of amorphous silicon (6 pages)	245214
R. L. C. Vink, G. T. Barkema, M. A. Stijnman, and R. H. Bisseling	
Semiconductors II: surfaces, interfaces, microstructures, and related topics	
Charge transport through quantum dots via time-varying tunnel coupling (4 pages)	245301
F. Renzoni and T. Brandes	
Loss-induced on/off switching in a channel add/drop filter (7 pages)	245302
Shanhui Fan, Pierre R. Villeneuve, J. D. Joannopoulos, and H. A. Haus	
Optical anisotropy of (001)-GaAs surface quantum wells (8 pages)	245303
L. F. Lastras-Martínez, D. Rönnow, P. V. Santos, M. Cardona, and K. Eberl	
Polarization spectroscopy of single CdSe quantum rods (4 pages)	245304
X. Chen, A. Nazzal, D. Goorskey, Min Xiao, Z. Adam Peng, and Xiaogang Peng	
Electrostatic fields and compositional fluctuations in (In,Ga)N/GaN multiple quantum wells grown by plasma-assisted molecular-beam epitaxy (6 pages)	245305
Patrick Waltereit, Oliver Brandt, Jens Ringling, and Klaus H. Ploog	
Negative magnetoresistance due to ballistic weak localization in a dense hexagonal lattice of antidots (7 pages)	245306
A. Pouydebasque, A. G. Pogosov, M. V. Budantsev, A. E. Plotnikov, A. I. Toropov, D. K. Maude, and J. C. Portal	
Formation of island chains in SiGe/Si heteroepitaxy by elastic anisotropy (4 pages)	245307
M. Meixner, E. Schöll, M. Schmidbauer, H. Raidt, and R. Köhler	
Diffusion equation and spin drag in spin-polarized transport (7 pages)	245308
Karsten Flensberg, Thomas Stibius Jensen, and Niels Asger Mortensen	
Tunneling from a correlated two-dimensional electron system transverse to a magnetic field (15 pages)	245309
T. Sharpee, M. I. Dykman, and P. M. Platzman	
Lattice dynamics of CdS/ZnSe strained layer superlattices studied by Raman scattering (8 pages)	245310
A. Dinger, M. Göppert, R. Becker, M. Grün, S. Petillon, C. Klingshirn, J. Liang, V. Wagner, and J. Geurts	
Intersubband hole-phonon and alloy disorder scattering in SiGe quantum wells (9 pages)	245311
Z. Ikonić, P. Harrison, and R. W. Kelsall	
Dopant atom distribution and spatial confinement of conduction electrons in Sb-doped SnO ₂ nanoparticles (9 pages)	245312
C. McGinley, H. Borchert, M. Pflughoeft, S. Al Moussalami, A. R. B. de Castro, M. Haase, H. Weller, and T. Möller	
Charge-fluctuation-induced dephasing in a gated mesoscopic interferometer (13 pages)	245313
Georg Seelig and Markus Büttiker	
Electron scattering on circular symmetric magnetic profiles in a two-dimensional electron gas (8 pages)	245314
J. Reijniers, F. M. Peeters, and A. Matulis	
Transmission properties of the oscillating δ -function potential (9 pages)	245315
D. F. Martinez and L. E. Reichl	
Chern-Simons matrix model: Coherent states and relation to Laughlin wave functions (8 pages)	245316
Dimitra Karabali and B. Sakita	
Calorimetric investigation of intersublevel transitions in charged quantum dots (7 pages)	245317
K. Goede, A. Weber, F. Guffarth, C. M. A. Kapteyn, F. Heinrichsdorff, R. Heitz, D. Bimberg, and M. Grundmann	
Fermi gas response to the nonadiabatic switching of an external potential (9 pages)	245318
Y. Adamov and B. Muzykantskii	

Lattice deformation in InAs/GaAs superlattices characterized by MeV ion channeling (6 pages)	245319
L. J. M. Selen, L. J. van IJendoorn, F. J. J. Janssen, M. J. A. de Voigt, and P. J. M. Smulders	
Electron-phonon interaction in a spherical quantum dot with finite potential barriers: The Fröhlich Hamiltonian (9 pages)	245320
Dmitriy V. Melnikov and W. Beall Fowler	
Efficient self-consistent method using basis splines for the investigation of interacting two-dimensional electrons in a random impurity potential (14 pages)	245321
M. Hofmann, M. Bockstedte, and O. Pankratov	
Many-body spectrum and particle localization in quantum dots and finite rotating Bose condensates (6 pages)	245322
M. Manninen, S. Viefers, M. Koskinen, and S. M. Reimann	
Theoretical study of the nonpolar surfaces and their oxygen passivation in 4H- and 6H-SiC (7 pages)	245323
E. Rauls, Z. Hajnal, P. Deák, and Th. Frauenheim	
Interactions in chaotic nanoparticles: Fluctuations in Coulomb blockade peak spacings (13 pages)	245324
Denis Ullmo and Harold U. Baranger	
Structural transition of inversion domain boundaries through interactions with stacking faults in epitaxial GaN (12 pages)	245325
G. P. Dimitrakopoulos, Ph. Komninou, J. Kioseoglou, Th. Kehagias, E. Sarigiannidou, A. Georgakilas, G. Nouet, and Th. Karakostas	
Hamiltonian theory of the composite-fermion Wigner crystal (17 pages)	245326
R. Narevich, Ganpathy Murthy, and H. A. Fertig	
Interface modulation and quantum well to quantum wire crossover in semiconductor heterostructures (6 pages)	245327
T. G. Dargam, R. B. Capaz, and Belita Koiller	
Development of an eight-band theory for quantum dot heterostructures (16 pages)	245328
E. P. Pokatilov, V. A. Fonoberov, V. M. Fomin, and J. T. Devreese	
Electron and hole states in quantum dot quantum wells within a spherical eight-band model (7 pages)	245329
E. P. Pokatilov, V. A. Fonoberov, V. M. Fomin, and J. T. Devreese	
Theoretical study of the chemical vapor deposition of (100) silicon from silane (11 pages)	245330
Jeung Ku Kang and Charles B. Musgrave	
Photoluminescence excitation spectroscopy of semiconductor microcavities (5 pages)	245331
C. Pecharromán, J. K. Son, I. W. Tao, and E. E. Mendez	
Density-functional study of adsorption of Co on Si(100) (6 pages)	245332
Andrew P. Horsfield, Steven D. Kenny, and Hideaki Fujitani	
Electron transport and shot noise in double-barrier resonant diodes: The role of Pauli and Coulomb correlations (11 pages)	245333
V. Ya. Aleshkin and L. Reggiani	
Quantification of segregation and mass transport in $\text{In}_x\text{Ga}_{1-x}\text{As}/\text{GaAs}$ Stranski-Krastanow layers (15 pages)	245334
A. Rosenauer, D. Gerthsen, D. Van Dyck, M. Arzberger, G. Böhm, and G. Abstreiter	
Contact phenomena in two-dimensional electron systems in the quantum Hall effect regime (6 pages)	245335
V. B. Shikin	
Poisson and Wigner-Dyson distributions of conductance fluctuations in quantum cavities (6 pages)	245336
Y. Takagaki and K. H. Ploog	
Quantum size and shape effects on the excited states of $\text{In}_x\text{Ga}_{1-x}\text{As}$ quantum dots (8 pages)	245337
M. Bissiri, G. Baldassarri Höger von Högersthal, M. Capizzi, P. Frigeri, and S. Franchi	
Noncrossing approximation for the anisotropic Kondo model: Charge fluctuations in a quantum box (20 pages)	245338
Eran Lebanon, Avraham Schiller, and Vilen Zevin	

Time-resolved photoluminescence of $\text{In}_x\text{Ga}_{1-x}\text{N}/\text{GaN}$ multiple quantum well structures: Effect of Si doping in the barriers (7 pages)	245339
C. K. Choi, Y. H. Kwon, B. D. Little, G. H. Gainer, J. J. Song, Y. C. Chang, S. Keller, U. K. Mishra, and S. P. DenBaars	
Rashba effect in inversion layers on p -type InAs MOSFET's (4 pages)	245340
Saadi Lamari	
Surface phonons of $\text{Si}(001)-(1 \times 1)$ (8 pages)	245341
Ulrich Freking, Albert Mazur, and Johannes Pollmann	
Intraband hole burning of colloidal quantum dots (4 pages)	245342
Moonsub Shim and Philippe Guyot-Sionnest	
Surface physics, low-dimensional systems, and related topics	
Diffusion barrier caused by 1×1 and 7×7 on $\text{Si}(111)$ during phase transition (5 pages)	245401
H. Hibino, C.-W. Hu, T. Ogino, and I. S. T. Tsong	
Structure of monolayer tin oxide films on $\text{Pt}(111)$ formed using NO_2 as an efficient oxidant (10 pages)	245402
Matthias Batzill, David E. Beck, and Bruce E. Koel	
Resolution enhancement and improved data interpretation in electrostatic force microscopy (11 pages)	245403
J. Colchero, A. Gil, and A. M. Baró	
Variable wavelength grazing incidence x-ray reflectivity measurements of structural changes on annealing Cu/NiFe multilayers (7 pages)	245404
G. M. Luo, Z. H. Mai, T. P. A. Hase, B. D. Fulthorpe, B. K. Tanner, C. H. Marrows, and B. J. Hickey	
Three-dimensional crystalline carbon: Stable polymers of C_{20} fullerene (4 pages)	245405
Susumu Okada, Yoshiyuki Miyamoto, and Mineo Saito	
Optical properties of ZnI_2 films (7 pages)	245406
Pankaj Tyagi and A. G. Vedeshwar	
Size-dependent properties of CeO_{2-y} nanoparticles as studied by Raman scattering (8 pages)	245407
Jonathan E. Spanier, Richard D. Robinson, Feng Zhang, Siu-Wai Chan, and Irving P. Herman	
Potassium intercalated graphyne (7 pages)	245408
Nobuo Narita, Sumiaki Nagai, and Shugo Suzuki	
Stochastic friction force mechanism of energy dissipation in noncontact atomic force microscopy (13 pages)	245409
L. N. Kantorovich	
Simple generic method for predicting the effect of strain on surface diffusion (4 pages)	245410
D. J. Shu, Feng Liu, and X. G. Gong	
Nuclear-reaction analysis of H at the $\text{Pb}/\text{Si}(111)$ interface: Monolayer depth distinction and interface structure (6 pages)	245411
K. Fukutani, M. Wilde, and M. Matsumoto	
Epitaxial growth of Cr on $\text{Ag}(001)$ (7 pages)	245412
P. Steadman, C. Norris, C. L. Nicklin, N. Jones, J. S. G. Taylor, S. A. de Vries, and S. L. Bennett	
Epitaxy of diamond on $\text{Si}(100)$ and surface-roughening-induced crystal misorientation (5 pages)	245413
X. Jiang, C. L. Jia, M. Szameitat, and C. Rickers	
Restructuring in step decorations grown by simulated epitaxy of Cu on a bcc $\text{W}(110)$ surface (5 pages)	245414
Jolanta M. Rogowska	
Chaos and anomalous diffusion of adatoms on solid surfaces (11 pages)	245415
R. Guantes, J. L. Vega, and S. Miret-Artés	
Evidence of pore correlation in porous silicon: An x-ray grazing-incidence study (4 pages)	245416
V. Chamard, P. Bastie, D. Le Bolloch, G. Dolino, E. Elkaïm, C. Ferrero, J.-P. Lauriat, F. Rieutord, and D. Thiaudière	

Observation of the satellite signal in Co 2 <i>p</i> photoemission spectra: Evidence of a localized electronic structure in thin films (7 pages)	245417
Krishna G. Nath, Y. Haruyama, and T. Kinoshita	
Interdiffusion and reaction of metals: The influence and relaxation of mismatch-induced stress (13 pages)	245418
F. Hartung and G. Schmitz	
Na 1 <i>s</i> photoabsorption of free and deposited NaCl clusters: Development of bond length with cluster size (9 pages)	245419
M. Riedler, A. R. B. de Castro, A. Kolmakov, J. O. Löfken, C. Nowak, A. V. Soldatov, A. Wark, G. Yalovega, and T. Möller	
Dimer diffusion as a driving mechanism of the step bunching instability during homoepitaxial growth (6 pages)	245420
M. Vladimirova, A. De Vita, and A. Pimpinelli	
Comprehensive study of the metal/semiconductor character of adatom-induced Ag/Si(111) reconstructions (4 pages)	245421
H. M. Zhang, Kazuyuki Sakamoto, and R. I. G. Uhrberg	
Three-dimensional domain growth on the size scale of the capillary length: Effective growth exponent and comparative atomistic and mean-field simulations (14 pages)	245422
Matthias Strobel, Karl-Heinz Heinig, and Wolfhard Möller	
<i>O(N)</i> real-space method for <i>ab initio</i> quantum transport calculations: Application to carbon nanotube-metal contacts (5 pages)	245423
Marco Buongiorno Nardelli, J.-L. Fattebert, and J. Bernholc	
Stoichiometry dependence of the Raman spectrum of alkali-doped single-wall carbon nanotubes (6 pages)	245424
N. Bendiab, E. Anglaret, J.-L. Bantignies, A. Zahab, J. L. Sauvajol, P. Petit, C. Mathis, and S. Lefrant	
Cumulative Author Index	iii