

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 63, NUMBER 4

CONTENTS

15 JANUARY 2001-II

RAPID COMMUNICATIONS

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

- Temperature dependence of the resistivity of a dilute two-dimensional electron system in high parallel magnetic field (*4 pages*) 041101(R)
K. M. Mertes, Hairong Zheng, S. A. Vitkalov, M. P. Sarachik, and T. M. Klapwijk
- Mobility edge in aperiodic Kronig-Penney potentials with correlated disorder: Perturbative approach (*4 pages*) 041102(R)
F. M. Izrailev, A. A. Krokhin, and S. E. Ulloa
- Observation of dynamic coupling between the Q_1 and Q_2 charge-density waves in NbSe_3 (*4 pages*) 041103(R)
Y. Li, D. Y. Noh, J. H. Price, K. L. Ringland, J. D. Brock, S. G. Lemay, K. Cicak, R. E. Thorne, and Mark Sutton

Semiconductors I: bulk

- Local-structure analysis around dopant atoms using multiple energy x-ray holography (*4 pages*) 041201(R)
Kouichi Hayashi, Masaki Matsui, Yasuhiro Awakura, Takahiro Kaneyoshi, Hajime Tanida, and Masashi Ishii

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

- Reaction path for Te during surfactant-mediated epitaxial growth of GaAs (100) (*4 pages*) 041301(R)
C. D. Consorte, C. Y. Fong, M. D. Watson, L. H. Yang, and S. Ciraci
- Nucleation and growth kinetics in semiconductor chemical vapor deposition (*4 pages*) 041302(R)
J. Spitzmüller, M. Fehrenbacher, H. Rauscher, and R. J. Behm
- Parametric luminescence of microcavity polaritons (*4 pages*) 041303(R)
Cristiano Ciuti, Paolo Schwendimann, and Antonio Quattropani
- Temperature-dependent resistivity anomaly in doped AlAs/GaAs lateral superlattices: Evidence for Fermi-liquid behavior (*4 pages*) 041304(R)
Petra Denk and Jean-Luc Pelouard
- Spin effects in the magnetodrag between double quantum wells (*4 pages*) 041305(R)
J. G. S. Lok, S. Kraus, M. Pohlt, W. Dietsche, K. von Klitzing, W. Wegscheider, and M. Bichler

Surface physics, low-dimensional systems, and related topics

- Intensities of the Raman-active modes in single and multiwall nanotubes (*4 pages*) 041401(R)
S. Reich, C. Thomsen, G. S. Duesberg, and S. Roth
- Role of orientational forces in nonactivated molecular dissociation on a metal surface (*4 pages*) 041402(R)
H. F. Busnengo, C. Crespos, W. Dong, A. Salin, and J. C. Rayez



Partial density of occupied valence states by x-ray standing waves and high-resolution photoelectron spectroscopy (4 pages)	041403(R)
J. C. Woicik, E. J. Nelson, T. Kendelewicz, P. Pianetta, Manish Jain, Leeor Kronik, and James R. Chelikowsky	

ARTICLES

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

Model of a two-dimensional photonic bicrystal (6 pages)	045101
P. Kopperschmidt and L. C. Kimerling	
Strongly interacting Luttinger-liquid state in the integrable model of spinless fermions (5 pages)	045102
Igor N. Karnaukhov	
Zhang-Rice singlet-state formation by oxygen 1s resonant x-ray emission in edge-sharing copper-oxide systems (4 pages)	045103
Kozo Okada and Akio Kotani	
Dipole and quadrupole contributions to polarized Cu K x-ray absorption near-edge structure spectra of CuO (10 pages)	045104
S. Bocharov, Th. Kirchner, G. Dräger, O. Sipr, and A. Šimůnek	
Phase diagram of the quarter-filled extended Hubbard model on a two-leg ladder (11 pages)	045105
Matthias Vojta, Arnd Hübsch, and R. M. Noack	
Localization of eigenstates in a modified Tomonaga-Luttinger model (13 pages)	045106
Dimitry M. Gangardt and Shmuel Fishman	
Correlated hopping of electrons: Effect on the Brinkman-Rice transition and the stability of metallic ferromagnetism (5 pages)	045107
M. Kollar and D. Vollhardt	
Numerical verification of universality for the Anderson transition (5 pages)	045108
Keith Slevin and Tomi Ohtsuki	
High-pressure resistance of PuTe up to 25 GPa (7 pages)	045109
V. Ichas, J. C. Griveau, J. Rebizant, and J. C. Spirlet	
Effect of the long-range random potential on optical conductivity in a one-dimensional extended-Fermi-surface system (7 pages)	045110
Sujit Sarkar	
Electronic structure of and covalency driven metal-insulator transition in $\text{BaCo}_{1-x}\text{Ni}_x\text{S}_2$ (12 pages)	045111
S. R. Krishnakumar, T. Saha-Dasgupta, N. Shanthi, Priya Mahadevan, and D. D. Sarma	
First-principles study of cation distribution in eighteen closed-shell $A^{\text{II}}B_2^{\text{III}}\text{O}_4$ and $A^{\text{IV}}B_2^{\text{II}}\text{O}_4$ spinel oxides (8 pages)	045112
Su-Huai Wei and S. B. Zhang	
Impurity-induced ferromagnetism in a doped triplet excitonic insulator (7 pages)	045113
Takashi Ichinomiya	
Charge instabilities near a Van Hove singularity (11 pages)	045114
J. González	
Electronic structure, bonding, and ground-state properties of AlB_2 -type transition-metal diborides (12 pages)	045115
P. Vajeeston, P. Ravindran, C. Ravi, and R. Asokamani	
Jellium surface energy beyond the local-density approximation: Self-consistent-field calculations (11 pages)	045116
J. M. Pitarke and A. G. Eguiluz	
Femtosecond laser pulse induced breakdown in dielectric thin films (5 pages)	045117
J. Jasapara, A. V. V. Nampoothiri, W. Rudolph, D. Ristau, and K. Starke	

Limits of the exchange-correlation local fields in the magnetic response of a spin-polarized electron gas (7 pages)	045118
Marco Polini and Mario P. Tosi	
Electronic topological transitions in Zn under compression (5 pages)	045119
Vladimir V. Kechin	
Reconstructed three-dimensional electron momentum density in lithium: A Compton scattering study (13 pages)	045120
Yoshikazu Tanaka, Y. Sakurai, A. T. Stewart, N. Shiotani, P. E. Mijnders, S. Kaprzyk, and A. Bansil	
Spinless fermion ladders at half filling (8 pages)	045121
P. Donohue, M. Tsuchiizu, T. Giamarchi, and Y. Suzumura	
Spectral properties of a narrow-band Anderson model (9 pages)	045122
Steffen Schäfer and David E. Logan	
Dephasing and the metal-insulator transition (4 pages)	045123
Junren Shi and X. C. Xie	

Semiconductors I: bulk

Configurational metastable defects in irradiated epitaxially grown boron-doped <i>p</i> -type Si (5 pages)	045201
M. Mamor, M. Willander, F. D. Auer, W. E. Meyer, and E. Sveinbjörnsson	
Polariton propagation in high quality semiconductors: Microscopic theory and experiment versus additional boundary conditions (17 pages)	045202
H. C. Schneider, F. Jahnke, S. W. Koch, J. Tignon, T. Hasche, and D. S. Chemla	
Direct identification of As vacancies in GaAs using positron annihilation calibrated by scanning tunneling microscopy (9 pages)	045203
J. Gebauer, R. Krause-Rehberg, C. Domke, Ph. Ebert, K. Urban, and T. E. M. Staab	
Path integral Monte Carlo simulations of silicates (8 pages)	045204
Chr. Rickhardt, P. Nielaba, M. H. Müser, and K. Binder	
Influence of dopants and substrate material on the formation of Ga vacancies in epitaxial GaN layers (8 pages)	045205
J. Oila, V. Ranki, J. Kivioja, K. Saarinen, P. Hautajärvi, J. Likonen, J. M. Baranowski, K. Pakula, T. Suski, M. Leszczynski, and I. Grzegory	
<i>Ab initio</i> calculation of Peierls stress in silicon (9 pages)	045206
Masayasu Miyata and Takeo Fujiwara	

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

Coulomb effects on the transport properties of quantum dots in a strong magnetic field (8 pages)	045301
V. Moldoveanu, A. Aldea, A. Manolescu, and M. Niță	
Triple junctions and elastic stability of polycrystalline silicon (4 pages)	045302
Sonia Costantini, Paola Alippi, Luciano Colombo, and Fabrizio Cleri	
Energy spectra of fractional quantum Hall systems in the presence of a valence hole (14 pages)	045303
Arkadiusz Wójs and John J. Quinn	
Photoluminescence from fractional quantum Hall systems: Role of separation between electron and hole layers (11 pages)	045304
Arkadiusz Wójs and John J. Quinn	
Hidden symmetry and magnetospectroscopy of quantum wells near filling factor $\nu=2$ (11 pages)	045305
E. I. Rashba and M. D. Sturge	
Bistable resistance switching in a ferromagnetic quantum Hall system induced by exchange enhancement of the Zeeman energy (8 pages)	045306
G. Nachtwei, A. Manolescu, N. Nestle, and H. Künzel	

Optical properties and collective excitations of plasmons in semiconductor superlattices in magnetic fields (9 pages)	045307
Haeng Ki Lee, Eun Yong Kim, Ki Soo Sohn, Jai Yon Ryu, and Suck Whan Kim	
Solid phase diagram of a classical electronic bilayer (6 pages)	045308
J.-J. Weis, D. Levesque, and S. Jorge	
In-phase step wandering on Si(111) vicinal surfaces: Effect of direct current heating tilted from the step-down direction (8 pages)	045309
M. Degawa, H. Minoda, Y. Tanishiro, and K. Yagi	
Single-electron charging in quantum dots with large dielectric mismatch (6 pages)	045310
A. Orlandi, M. Rontani, G. Goldoni, F. Manghi, and E. Molinari	
Interaction of tunnel-coupled quantum dots in a magnetic field (4 pages)	045311
D. S. Duncan, M. A. Topinka, R. M. Westervelt, K. D. Maranowski, and A. C. Gossard	
Interband absorption in charged Ge/Si type-II quantum dots (6 pages)	045312
A. I. Yakimov, N. P. Stepina, A. V. Dvurechenskii, A. I. Nikiforov, and A. V. Nenashev	
Circular polarization of excitonic luminescence in CdTe quantum wells with excess electrons of different densities (5 pages)	045313
C. Y. Hu, W. Ossau, P. H. Tan, T. Wojtowicz, G. Karczewski, and J. Kossut	
Local lattice distortion in $\text{Si}_{1-x-y}\text{Ge}_x\text{C}_y$ epitaxial layers from x-ray absorption fine structure (8 pages)	045314
D. De Salvador, M. Tormen, M. Berti, A. V. Drigo, F. Romanato, F. Boscherini, J. Stangl, S. Zerlauth, G. Bauer, L. Colombo, and S. Mobilio	
Edge and bulk effects in Terahertz photoconductivity of an antidot superlattice (5 pages)	045315
B. G. L. Jager, S. Wimmer, A. Lorke, J. P. Kotthaus, W. Wegscheider, and M. Bichler	
Coherent control of the nonradiative decay of excitons in asymmetric quantum well structures (8 pages)	045316
S. M. Sadeghi and H. M. van Driel	
Self-interaction-free density-functional theoretical study of the electronic structure of spherical and vertical quantum dots (9 pages)	045317
T. F. Jiang, Xiao-Min Tong, and Shih-I Chu	
Resistance fluctuations in quantum Hall transitions: Network of compressible-incompressible regions (6 pages)	045318
Tomoki Machida, Susumu Ishizuka, Susumu Komiyama, Koji Muraki, and Yoshiro Hirayama	
Dynamics of a superlattice with an impurity in an ac electric field (5 pages)	045319
Ai-Zhen Zhang, Ping Zhang, Duan Suqing, Xian-Geng Zhao, and Jiu-Qing Liang	
Low-energy exciton states in a nanoscopic semiconducting ring (4 pages)	045320
Hui Hu, Guang-Ming Zhang, Jia-Lin Zhu, and Jia-Jiong Xiong	
Exciton-exciton interaction in semiconductor quantum wells (7 pages)	045321
A. Thilagam	
Terrace and step contributions to the optical anisotropy of Si(001) surfaces (7 pages)	045322
W. G. Schmidt, F. Bechstedt, and J. Bernholc	
Polarized front-illumination response in intraband quantum dot infrared photodetectors at 77 K (7 pages)	045323
E. Finkman, S. Maimon, V. Immer, G. Bahir, S. E. Schacham, F. Fossard, F. H. Julien, J. Brault, and M. Gendry	
Intrasubband and intersubband electron relaxation in semiconductor quantum wire structures (8 pages)	045324
Marcos R. S. Tavares, S. Das Sarma, and Guo-Qiang Hai	
Model of single-electron decay from a strongly isolated quantum dot (8 pages)	045325
J. Martorell, D. W. L. Sprung, P. A. Machado, and C. G. Smith	

Surface physics, low-dimensional systems, and related topics

Dissociative electron attachment and dipolar dissociation of H^- electron stimulated desorption from hydrogenated diamond films (7 pages)	045401
A. Hoffman, A. Laikhtman, S. Ustaze, M. Hadj Hamou, M. N. Hedhili, J.-P. Guillotin, Y. Le Coat, D. Teillet Billy, R. Azria, and M. Tronc	
Structure and energetics of boron nitride fullerenes: The role of stoichiometry (5 pages)	045402
Simone S. Alexandre, H��lio Chacham, and R. W. Nunes	
Unconventional features of Ag epitaxy on the Si(111)7�7 surface (5 pages)	045403
J. Myslive��ek, P. Sobot��k, I. O��t��dal, T. Jarol��mek, and P. Smilauer	
Orthogonal tight-binding molecular-dynamics simulations of silicon clusters (15 pages)	045404
B. K. Panda, S. Mukherjee, and S. N. Behera	
Vacancy ordering transitions in one-dimensional lattice gas with Coulomb interactions (8 pages)	045405
T. C. King, Y. K. Kuo, M. J. Skove, and S.-J. Hwu	
Deuterium diffusion in silicon-doped diamondlike carbon films (7 pages)	045406
E. Vainonen-Ahlgren, T. Ahlgren, J. Likonen, S. Lehto, T. Sajavaara, W. Rydman, J. Keinonen, and C. H. Wu	
Negative-ion conversion of fluorine atoms in grazing scattering from a LiF(001) surface: A coupled cluster approach (10 pages)	045407
A. G. Borisov, J. P. Gauyacq, V. Sidis, and A. K. Kazansky	
Image potential states on periodically corrugated metal surfaces (5 pages)	045408
Jun Lei, Hong Sun, K. W. Yu, Steven G. Louie, and Marvin L. Cohen	
Self-diffusion of one-dimensional clusters on fcc (110)(2�1) surfaces of Pt, Ag, Cu, and Ni (5 pages)	045409
Ulrike K��rpick	
<i>Ab initio</i> study of symmetric tilt boundaries in ZnO (10 pages)	045410
Fumiyasu Oba, Shigeto R. Nishitani, Hirohiko Adachi, Isao Tanaka, Masanori Kohyama, and Shingo Tanaka	
Interaction of molecular hydrogen ions with the LiF(100) surface (6 pages)	045411
K. Sekar, J. Scheer, K. Br��uning, W. Heiland, I. A. Wojciechowski, and V. Kh. Ferleger	
Kinetics of fast island decay on Ag(111) (5 pages)	045412
Karina Morgenstern, Georg Rosenfeld, George Comsa, Mads R. S��rensen, Bj��rk Hammer, Erik L��gsgaard, and Flemming Besenbacher	
Fluorinated single-wall carbon nanotubes (8 pages)	045413
Konstantin N. Kudin, Holger F. Bettinger, and Gustavo E. Scuseria	
Complete determination of the reflection coefficient in neutron specular reflection by absorptive nonmagnetic media (4 pages)	045414
H. Leeb, H. Gr��tz, J. Kasper, and R. Lipperheide	
Ionization probability of sputtered negative cluster ions: Dependence on surface work function and emission velocity (7 pages)	045415
Hubert Gnaser	
Electron transport in nanotube��molecular-wire hybrids (4 pages)	045416
G. Fagas, G. Cuniberti, and K. Richter	
Polarization anisotropy in mesoscale domains of poly(phenylene vinylene) thin films (5 pages)	045417
Pei-Kuen Wei, Yuh-Fen Lin, Wunshain Fann, Yuh-Zheng Lee, and Show-An Chen	
Structure and physical properties of Na_4C_{60} under ambient and high pressures (9 pages)	045418
Y. Kubozono, Y. Takabayashi, T. Kambe, S. Fujiki, S. Kashino, and S. Emura	
First-principles study of the adsorption of CO on $TiO_2(110)$ (6 pages)	045419
Zongxian Yang, Ruqian Wu, Qiming Zhang, and D. W. Goodman	
Coherent light scattering and resonant energy transfer in an apertureless scanning near-field optical microscope (10 pages)	045420
Jarom��r Fiur���ek, Boris Chernobrod, Yehiam Prior, and Ilya Sh. Averbukh	

CONTENTS - *Continued*

PHYSICAL REVIEW B

THIRD SERIES, VOLUME 63, NUMBER 4

15 JANUARY 2001-II

Thermal stability of the endohedral fullerenes NaC_{60} , NaC_{70} , and PaC_{60} (5 pages)	045421
M. Waiblinger, K. Lips, W. Harneit, A. Weidinger, E. Dietel, and A. Hirsch	
Two-dimensional elastic lattice model with spontaneous stress (9 pages)	045422
Yukio Saito, Hideaki Uemura, and Makio Uwaha	

ERRATA

Erratum: Investigation of a two-dimensional dysprosium germanide on Ge(111): A medium-energy ion-scattering study including direct observation of a reversal of top-layer buckling upon adsorption of hydrogen [Phys. Rev. B 62 , 5016 (2000)] (1 page)	049901(E)
D. J. Spence, T. C. Q. Noakes, P. Bailey, and S. P. Tear	

Cumulative Author Index	i
-------------------------------	---