

RAPID COMMUNICATIONS

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

- Possible non-Fermi-liquid nature of paramagnetic UBe_{13} : The optical point of view R10 001
F. Bommeli, L. Degiorgi, P. Wachter, F. B. Anders, and A. V. Mitin
- Metamagnetism in the two-dimensional Hubbard model with easy axis R10 005
F. Bagehorn and R. E. Hetzel
- Pressure effects on the metal-insulator transition in magnetoresistive manganese perovskites R10 009
V. Laukhin, J. Fontcuberta, J. L. García-Muñoz, and X. Obradors
- Theory of photoinduced ballistic bulk current in metals R10 013
V. L. Gurevich and A. Thellung

Semiconductors I: bulk

- Comparative study of vibrational frequencies of H_2 molecules in Si and GaAs R10 016
Yasuharu Okamoto, Mineo Saito, and Atsushi Oshiyama
- Interactions of hydrogen with native defects in GaN R10 020
Chris G. Van de Walle
- Spontaneous polarization and piezoelectric constants of III-V nitrides R10 024
Fabio Bernardini, Vincenzo Fiorentini, and David Vanderbilt

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

- Biexcitonic binding energies in the transition regime from three- to two-dimensional semiconductors R10 028
A. Euteneuer, J. Möbius, R. Rettig, E. J. Mayer, M. Hofmann, W. Stolz, E. O. Göbel, and W. W. Rühle
- Polarization-dependent phenomena in the reflectivity spectra of semiconductor quantum microcavities R10 032
D. Baxter, M. S. Skolnick, A. Armitage, V. N. Astratov, D. M. Whittaker, T. A. Fisher, J. S. Roberts,
D. J. Mowbray, and M. A. Kaliteevski
- Carrier-lifetime enhancement and mass discontinuity inferred from transport in a parabolic quantum well during
subband depopulation R10 036
G. R. Facer, B. E. Kane, R. G. Clark, L. N. Pfeiffer, and K. W. West
- Distinct center-of-mass quantization of light-hole and heavy-hole excitons in wide ZnTe-(Zn,Mg)Te
quantum wells R10 040
Pierre Lefebvre, Vincent Calvo, Noël Magnea, Thierry Taliercio, Jacques Allègre, and Henry Mathieu
- Phonon-drag thermopower of a ballistic quantum wire R10 044
M. Tsaousidou and P. N. Butcher
- Mesoscopic behavior near a two-dimensional metal-insulator transition R10 048
Dragana Popović and S. Washburn
- Skyrmionic excitons R10 052
T. Portengen, J. R. Chapman, V. Nikos Nicopoulos, and N. F. Johnson
- Observation of two-dimensional exciton-phonon quasibound states R10 056
N. T. Pelekanos, H. Haas, N. Magnea, V. I. Belitsky, and A. Cantarero



Effect of interchain coupling on conducting polymer luminescence: Excimers in derivatives of poly(phenylene vinylene)	R10 060
M. W. Wu and E. M. Conwell	

Surface physics, low-dimensional systems, and related topics

Damping width of the Mie plasmon	R10 063
Haruki Kurasawa, Kazuhiro Yabana, and Toshio Suzuki	
Effect of adsorption on surface roughening	R10 067
V. P. Zhdanov and B. Kasemo	
Observation of inverted island-substrate step structures in heteroepitaxial growth: Gd on W(100)	R10 071
R. G. White, M. H. Lee, N. P. Tucker, S. D. Barrett, and P. W. Murray	
Wave-dispersed two-photon absorption of C ₆₀	R10 075
GianPiero Banfi, Davide Fortusini, Marco Bellini, and Paolo Milani	
Atomic process of epitaxial growth of gold on magnesium oxide studied by cross-sectional time-resolved high-resolution electron microscopy	R10 079
Tokushi Kizuka and Nobuo Tanaka	

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

Electron-phonon interaction in disordered metal films: The resistivity and electron dephasing rate	10 089
N. G. Pitsina, G. M. Chulkova, K. S. Il'in, A. V. Sergeev, F. S. Pochinkov, E. M. Gershenzon, and M. E. Gershenson	
Spin and charge structure factor of the two-dimensional Hubbard model	10 097
Walter Zimmermann, Raymond Frésard, and Peter Wölfle	
Spontaneous polarization as a Berry phase of the Hartree-Fock wave function: The case of KNbO ₃	10 105
Sergio Dall'Olio, Roberto Dovesi, and Raffaele Resta	
Kondo-lattice-like effects of hydrogen in transition metals	10 115
R. Eder, H. F. Pen, and G. A. Sawatzky	
Cohesive properties of alkali halides	10 121
Klaus Doll and Hermann Stoll	
Photoexcitations in <i>para</i> -hexaphenyl	10 128
W. Graupner, F. Meghdadi, G. Leising, G. Lanzani, M. Nisoli, S. De Silvestri, W. Fischer, and F. Stelzer	
Emission properties of <i>para</i> -hexaphenyl polycrystalline films	10 133
A. Piaggi, G. Lanzani, G. Bongiovanni, A. Mura, W. Graupner, F. Meghdadi, G. Leising, and M. Nisoli	
Momentum-dependent excitations in highly ordered films of <i>para</i> -hexaphenyl	10 138
E. Zojer, M. Knupfer, R. Resel, F. Meghdadi, G. Leising, and J. Fink	
Transport and magnetic properties of a Mott-Hubbard system whose bandwidth and band filling are both controllable: R _{1-x} Ca _x TiO _{3+y/2}	10 145
T. Katsufuji, Y. Taguchi, and Y. Tokura	
Plasmon behavior of Zn from electron-energy-loss spectroscopy	10 154
K. Widder, M. Knupfer, O. Knauff, and J. Fink	
Translational invariance of the density and current temperature Green's functions for an electron gas in a uniform magnetic field	10 161
Kei Ito, Mariko Fukuda, and Tadashi Toyoda	
Applicability of the two-current model for systems with strongly spin-dependent disorder	10 165
John Banhart, H. Ebert, and A. Vernes	
Fermi surface and optical properties of ordered Cu ₃ Au	10 172
Sangeeta Sharma, A. K. Solanki, S. Auluck, and M. A. Khan	

Infrared reflectivity of the solid solutions $\text{LaNi}_{1-x}\text{Fe}_x\text{O}_3$ ($0.00 \leq x \leq 1.00$)	10 178
Néstor E. Massa, Horacio Falcón, Horacio Salva, and Raúl E. Carbonio	
Positron annihilation study of the electronic structure of LaB_6 and CeB_6	10 192
M. Biasini, H. M. Fretwell, S. B. Dugdale, M. A. Alam, Y. Kubo, H. Harima, and N. Sato	
Semiconductors I: bulk	
Structural and vibrational properties of amorphous $\text{Si}_{1-x}\text{Ge}_x$ alloys: An <i>ab initio</i> molecular-dynamics study	10 200
Eunja Kim, Young Hee Lee, Changfeng Chen, and Tao Pang	
Defect states in plastically deformed <i>n</i> -type silicon	10 208
D. Cavalcoli, A. Cavallini, and E. Gombia	
Vacancy aggregates in silicon	10 215
J. L. Hastings, S. K. Estreicher, and P. A. Fedders	
Optically detected electron-paramagnetic-resonance investigations of the substitutional oxygen defect in gallium arsenide	10 221
F. K. Koschnick, M. Linde, M. V. B. Pinheiro, and J.-M. Spaeth	
Spectral properties of quasiparticles in a semiconductor	10 228
A. Fleszar and W. Hanke	
Composition dependence of interband transition intensities in GaPN, GaAsN, and GaPAs alloys	10 233
L. Bellaiche, Su-Huai Wei, and Alex Zunger	
Capacitance transient study of the deep Fe acceptor in indium phosphide	10 241
A. Dadgar, R. Engelhardt, M. Kuttler, and D. Bimberg	
Defect structure and conductivity in tetrahedrally coordinated metal chalcogenide amorphous semiconductors	10 249
Baojie Yan, S. Grlani, and P. C. Taylor	
Er-related trap levels in GaAs:Er,O studied by optical spectroscopy under hydrostatic pressure	10 255
R. A. Hogg, K. Takahei, and A. Taguchi	
Long-lived photoexcited states in polydiacetylenes with different molecular and supramolecular organization	10 264
D. Comoretto, I. Moggio, C. Cuniberti, G. Dellepiane, M. E. Giardini, and A. Borghesi	
Surface and bulk electronic structure of thin-film wurtzite GaN	10 271
Sarnjeet S. Dhesi, Cristian B. Stagarescu, Kevin E. Smith, Dharanipal Doppalapudi, Raj Singh, and Theodore D. Moustakas	
Enhanced photoluminescence from porous silicon formed by nonstandard preparation	10 276
A. I. Belogorokhov, R. Enderlein, A. Tabata, J. R. Leite, V. A. Karavanskii, and L. I. Belogorokhova	
Semiconductors II: surfaces, interfaces, microstructures, and related topics	
Structure and stability of Bi layers on Si(111) and Ge(111) surfaces	10 283
C. Cheng and K. Kunc	
Surface atomic configurations due to dislocation activity in InAs/GaAs(110) heteroepitaxy	10 289
J. G. Belk, D. W. Pashley, C. F. McConville, J. L. Sudijono, B. A. Joyce, and T. S. Jones	
Freezing of strongly correlated electrons in bilayer systems with weak disorder	10 297
J. S. Thakur and D. Neilson	
Quasistatic and dynamic interaction of high-frequency fields with miniband electrons in semiconductor superlattices	10 303
S. Winnerl, E. Schomburg, J. Grenzer, H.-J. Regl, A. A. Ignatov, A. D. Semenov, K. F. Renk, D. G. Pavel'ev, Yu. Koschurinov, B. Melzer, V. Ustinov, S. Ivanov, S. Schaposchnikov, and P. S. Kop'ev	
Electronic structure, interfacial chemistry, and optical properties of $(\text{II-VI})_n/(\text{IV}_2)_m$ (110) superlattices	10 308
Liqiang Zhu, Enge Wang, and Liyuan Zhang	
Frictional Coulomb drag in strong magnetic fields	10 314
Martin Christian Bónsager, Karsten Flensberg, Ben Yu-Kuang Hu, and Antti-Pekka Jauho	

Mechanism of shakeup processes in the photoluminescence of a two-dimensional electron gas at high magnetic fields	10 326
Gleb Finkelstein, Hadas Shtrikman, and Israel Bar-Joseph	
Exciton-LO-phonon interaction in CuCl spherical quantum dots studied by resonant hyper-Raman spectroscopy	10 332
A. V. Baranov, S. Yamauchi, and Y. Masumoto	
Quantum nonlinear resonance and quantum chaos in Aharonov-Bohm oscillations in mesoscopic semiconductor rings	10 338
Gennady P. Berman, Evgeny N. Bulgakov, David K. Campbell, and Ilya V. Krive	
Vortices and vortical structures in systems with pairing of spatially separated electrons and holes	10 355
S. I. Shevchenko	
Conductance quantization and electron resonances in sharp tips and atomic-size contacts	10 369
A. Levy Yeyati, A. Martín-Rodero, and F. Flores	
Spin-ensemble density-functional theory for inhomogeneous quantum Hall systems	10 373
M. I. Lubin, O. Heinonen, and M. D. Johnson	
Phase diagram of a quantum Hall ferromagnet edge, spin-textured edges, and collective excitations	10 383
M. Franco and L. Brey	
Collective electromagnetic excitations in a double-layer two-dimensional electron system in a high magnetic field	10 392
I. E. Aronov, N. N. Beletskii, G. P. Berman, and A. R. Bishop	
Electronic structure of strained InP/Ga _{0.51} In _{0.49} P quantum dots	10 404
Craig Pryor, M-E. Pistol, and L. Samuelson	
Coherent spin dynamics of excitons in quantum wells	10 412
M. Dyakonov, X. Marie, T. Amand, P. Le Jeune, D. Robart, M. Brousseau, and J. Barrau	
Ultrafast energy relaxation in quantum dots through defect states: A lattice-relaxation approach	10 423
Xin-Qi Li and Yasuhiko Arakawa	
Second-harmonic generation involving valence-subband transitions in <i>p</i> -doped GaAs/Al _x Ga _{1-x} As quantum wells	10 428
A. Bitz, M. Marsi, E. Tuncel, S. Gürtler, J. L. Staehli, B. J. Vartanian, M. J. Shaw, and A. F. G. van der Meer	
Energy relaxation by multiphonon processes in InAs/GaAs quantum dots	10 435
R. Heitz, M. Veit, N. N. Ledentsov, A. Hoffmann, D. Bimberg, V. M. Ustinov, P. S. Kop'ev, and Zh. I. Alferov	
Quantum versus semiclassical analysis of the conductivity of two-dimensional electrons in a magnetic field	10 446
M. Hayne, A. Usher, J. J. Harris, and C. T. Foxon	
Formation of type-II excitons in CdTe/Cd _{1-x} Mn _x Te superlattices at high magnetic fields	10 453
H. H. Cheng, R. J. Nicholas, D. E. Ashenford, and B. Lunn	
Competing growth mechanisms of Ge/Si(001) coherent clusters	10 459
I. Goldfarb, P. T. Hayden, J. H. G. Owen, and G. A. D. Briggs	
Grazing-incidence x-ray scattering from stepped interfaces in AlAs/GaAs superlattices	10 469
E. A. Kondrashkina, S. A. Stepanov, R. Opatz, M. Schmidbauer, R. Köhler, R. Hey, M. Wassermeier, and D. V. Novikov	
Dimer buckling induced by single-dimer vacancies on the Si(001) surface near T_c	10 483
Takashi Yokoyama and Kunio Takayanagi	
Nonorthogonal tight-binding Hamiltonians for defects and interfaces in silicon	10 488
Noam Bernstein and Efthimios Kaxiras	
Model simulations of zeolite supralattices: Semiconductor Si clusters in sodalite	10 497
Alexander A. Demkov and Otto F. Sankey	
Fabrication of SiGe quantum dots on a Si(100) surface	10 505
Vinh Le Thanh, D. Bouchier, and D. Débarre	

Surface physics, low-dimensional systems, and related topics

Order-disorder phase transitions of oxygen on Rh(100)	10 511
A. Baraldi, V. R. Dhanak, G. Comelli, K. C. Prince, and R. Rosei	
Pt(100) quasihexagonal reconstruction: A comparison between scanning tunneling microscopy data and effective medium theory simulation calculations	10 518
G. Ritz, M. Schmid, P. Varga, A. Borg, and M. Rønning	
Analysis of photoemission and inverse photoemission spectra of Si(111) and sulphur-passivated InP(001) surfaces	10 526
M. W. C. Dharma-wardana, Z. Tian, Z. H. Lu, and L. J. Lewis	
<i>d</i> -electron frustration and the large fcc versus hcp binding preference in O adsorption on Pt(111)	10 532
Peter J. Feibelman	
Nonequilibrium configurations of monatomic steps on cleaved GaAs(110) surfaces	10 538
M. A. Rosentreter, M. Wenderoth, N. H. Theuerkrauf, A. J. Heinrich, M. A. Schneider, and R. G. Ulbrich	
Structure and apparent topography of TiO ₂ (110) surfaces	10 544
Kwok-On Ng and David Vanderbilt	
Ultrathin metal films on a metal oxide surface: Growth of Au on TiO ₂ (110)	10 549
Lei Zhang, Rajendra Persaud, and Theodore E. Madey	
O/Ni(111): Lateral interactions and binding-energy difference between fcc and hcp sites	10 558
C. Schwennicke and H. Pfnür	
Experimental and theoretical investigation of the microscopic vibrational and diffusional dynamics of sodium atoms on a Cu(001) surface	10 567
A. P. Graham, F. Hofmann, J. P. Toennies, L. Y. Chen, and S. C. Ying	
Kinetics of oxygen surfactant in Cu(001) homoepitaxial growth	10 579
Masanori Yata, Herve Rouch, and Keikichi Nakamura	
Surface structure analysis of Ni(111)-($\sqrt{3}\times\sqrt{3}$)R30°-Pb by impact-collision ion-scattering spectroscopy	10 585
Kenji Umezawa, Shigemitsu Nakanishi, Takahiro Yumura, Walter M. Gibson, Masatoshi Watanabe, Yoshiaki Kido, Shunya Yamamoto, Yasushi Aoki, and Hiroshi Naramoto	
Deposition of metallic clusters on a metallic surface at zero initial kinetic energy: Evidence for implantation and site exchanges	10 590
B. Nacer, C. Massobrio, and C. Félix	
Low-temperature resistance and its temperature dependence in nanostructured silver	10 596
X. Y. Qin, W. Zhang, L. D. Zhang, L. D. Jiang, X. J. Liu, and D. Jin	
Energy dispersions and bandwidth in Pd 4 <i>d</i> photoemission spectra	10 605
J.-S. Kang, D. W. Hwang, C. G. Olson, S. J. Youn, K.-C. Kang, and B. I. Min	
Enhancement of the formation of the C54 phase of TiSi ₂ through the introduction of an interposed layer of tantalum	10 614
A. Mouroux, S.-L. Zhang, and C. S. Petersson	
Chemistry and kinetics of the GaAs oxidation by plasma anodization: An <i>in situ</i> real-time ellipsometric study	10 621
M. Losurdo, P. Capezzuto, and G. Bruno	
Theory of negative-ion conversion of neutral atoms in grazing scattering from alkali halide surfaces	10 628
A. G. Borisov and V. Sidis	
Dephasing of localized and delocalized vibrational modes: CO adsorbed on Ru(001)	10 644
P. Jakob and B. N. J. Persson	
Comparison of the dielectric function of AlPd, Al ₃ Pd, and Al ₇₀ Pd ₂₀ Mn ₁₀ determined by electron-energy-loss measurements	10 651
M. Zurkirch, M. DeCrescenzi, M. Erbudak, and A. R. Kortan	
Electronic structure of titanium monoxide	10 656
S. Bartkowski, M. Neumann, E. Z. Kurmaev, V. V. Fedorenko, S. N. Shamin, V. M. Cherkashenko, S. N. Nemnov, A. Winiarski, and D. C. Rubie	

CONTENTS - *Continued*

PHYSICAL REVIEW B

THIRD SERIES, VOLUME 56, NUMBER 16

15 OCTOBER 1997-II

Exact calculation of multifractal exponents of the critical wave function of Dirac fermions in a random magnetic field	10 668
Horacio E. Castillo, Claudio de C. Chamon, Eduardo Fradkin, Paul M. Goldbart, and Christopher Mudry	
Cumulative Author Index	10 678