

PHYSICAL REVIEW B

CONDENSED MATTER

THIRD SERIES, VOLUME 54, NUMBER 20

CONTENTS

15 NOVEMBER 1996-II

RAPID COMMUNICATIONS

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

- Effects of orbital degeneracy on the Mott transition in infinite dimensions R14 221
Gabriel Kotliar and Henrik Kajueter
- Hubbard model versus t - J model: The one-particle spectrum R14 226
Henk Eskes and Robert Eder
- Optical spectroscopy of the charge-ordering transition in $\text{La}_{1.67}\text{Sr}_{0.33}\text{NiO}_4$ R14 230
T. Katsufuji, T. Tanabe, T. Ishikawa, Y. Fukuda, T. Arima, and Y. Tokura
- Force and conductance jumps in atomic-scale metallic contacts R14 234
T. N. Todorov and A. P. Sutton
- $4d$ resonant inelastic x-ray scattering in gadolinium R14 238
J.-J. Gallet, J.-M. Mariot, C. F. Hague, F. Sirotti, M. Nakazawa, H. Ogasawara, and A. Kotani

Semiconductors I: bulk

- Pressure-induced distortion of the amorphous tetrahedral network in α -GaSb: Direct evidence from EXAFS R14 242
A. G. Lyapin, V. V. Brazhkin, S. C. Bayliss, A. V. Sapelkin, J. P. Itié, A. Polian, and S. M. Clark
- Orthorhombic symmetry DX centers in S-doped GaSb, GaAs, and $\text{Al}_x\text{Ga}_{1-x}\text{As}$ R14 246
C. H. Park and D. J. Chadi

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

- Continuum contribution to excitonic four-wave mixing due to interaction-induced nonlinearities R14 250
D. Birkedal, V. G. Lyssenko, J. M. Hvam, and K. El Sayed
- Finite chain-length effect on nonlinear optical response in polysilane as investigated by electroabsorption spectroscopy R14 254
H. Kishida, H. Tachibana, K. Sakurai, M. Matsumoto, and Y. Tokura
- Spin splitting of subbands in quasi-one-dimensional electron quantum channels R14 257
Chuan-Kui Wang and K.-F. Berggren
- Current-induced decoupling of edge states in the integer quantum Hall effect R14 261
T. Machida, H. Hirai, S. Komiyama, T. Osada, and Y. Shiraki
- dc transport in quantum wires R14 265
Yuval Oreg and Alexander M. Finkel'stein
- Femtosecond luminescence measurements of the intersubband scattering rate in $\text{Al}_x\text{Ga}_{1-x}\text{As}/\text{GaAs}$ quantum wells under selective excitation R14 269
M. Hartig, S. Haacke, B. Deveaud, and L. Rota
- Probing the band structure of a two-dimensional hole gas using a one-dimensional superlattice R14 273
B. Brosh, M. Y. Simmons, S. N. Holmes, A. R. Hamilton, D. A. Ritchie, and M. Pepper
- Origin of the surface metallization in single-domain $\text{K}/\text{Si}(100)2\times 1$ R14 277
P. Segovia, G. R. Castro, A. Mascaraque, P. Prieto, H. J. Kim, and E. G. Michel
- Internal electron-electron interactions in one-dimensional systems detected by Raman spectroscopy R14 281
C. Steinebach, R. Krahne, G. Biese, C. Schüller, D. Heitmann, and K. Eberl
- Inhibition of spontaneous emission from quantum-well magnetoexcitons R14 285
A. Imamoglu

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW B

THIRD SERIES, VOLUME 54, NUMBER 20

15 NOVEMBER 1996-II

Even-odd correlations in capacitance fluctuations of quantum dots	R14 289
O. Prus, A. Auerbach, Y. Aloni, U. Sivan, and R. Berkovits	
Theory of electromagnetic response and collective excitations of a square lattice of antidots	R14 293
S. A. Mikhailov	
Reflection symmetric ballistic microstructures: Quantum transport properties	R14 297
Harold U. Baranger and Pier A. Mello	
Dephasing of Bloch oscillations in epitaxial superlattices	R14 301
Joseph P. Reynolds and Marshall Luban	
Distribution of the absorption by chaotic states in quantum dots	R14 305
Nobuhiko Taniguchi and Vladimir N. Prigodin	
Collective modes and electronic spectral function in smooth edges of quantum hall systems	R14 309
Sergio Conti and Giovanni Vignale	
Composite fermions in tilted magnetic fields and the effect of the confining potential width on the composite-fermion effective mass	R14 313
P. J. Gee, F. M. Peeters, J. Singleton, S. Uji, H. Aoki, C. T. B. Foxon, and J. J. Harris	
Diffusion thermopower at even-denominator fractions	R14 317
D. V. Khveshchenko	
Controlling Schottky energy barriers in organic electronic devices using self-assembled monolayers	R14 321
I. H. Campbell, S. Rubin, T. A. Zawodzinski, J. D. Kress, R. L. Martin, D. L. Smith, N. N. Barashkov, and J. P. Ferraris	
Superradiant emission from Bloch oscillations in semiconductor superlattices	R14 325
R. Martini, G. Klose, H. G. Roskos, H. Kurz, H. T. Grahn, and R. Hey	
Photoluminescent spectrum and dynamics of Si ⁺ -ion-implanted and thermally annealed SiO ₂ glasses	R14 329
Yoshihiko Kanemitsu, Naoya Shimizu, Takuya Komoda, Peter L. F. Hemment, and Brian J. Sealy	

Surface physics, low-dimensional systems, and related topics

Evidence for the presence of the multipole plasmon mode on Ag surfaces	R14 333
F. Moresco, M. Rocca, V. Zielasek, T. Hildebrandt, and M. Henzler	
Size-related ferroelectric-domain-structure transition in a polycrystalline PbTiO ₃ thin film	R14 337
S. B. Ren, C. J. Lu, J. S. Liu, H. M. Shen, and Y. N. Wang	

ARTICLES

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

Molecular-orbital theory of monatomic and diatomic substitutional defects as shallow <i>n</i> -type dopants in diamond	14 341
Alfred B. Anderson, Emilia J. Grantscharova, and John C. Angus	
Effect of electron-phonon interaction on a one-dimensional correlated electron system	14 349
Shreekantha Sil and Bibhas Bhattacharyya	
Dielectric-matrix calculation of the volume-plasmon dispersion relation for silicon	14 355
A. J. Forsyth, T. W. Josefsson, and A. E. Smith	
Real-space multigrid-based approach to large-scale electronic structure calculations	14 362
E. L. Briggs, D. J. Sullivan, and J. Bernholc	
Optical properties of solids within the independent-quasiparticle approximation: Dynamical effects	14 376
R. Del Sole and Raffaello Girlanda	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW B

THIRD SERIES, VOLUME 54, NUMBER 20

15 NOVEMBER 1996-II

Electron momentum-space densities of Li metal: A high-resolution Compton-scattering study	14 381
W. Schülke, G. Stutz, F. Wohler, and A. Kaprolat	
Theoretical and experimental study of the graphite 1s x-ray absorption edges	14 396
R. Ahuja, P. A. Brühwiler, J. M. Wills, B. Johansson, N. Mårtensson, and O. Eriksson	
Electronic structure and x-ray photoelectron spectroscopy of the α , β , and γ phases of Np	14 405
R. C. Albers, A. M. Boring, J. M. Wills, L. E. Cox, O. E. Eriksson, and N. E. Christensen	
Electronic structure and elastic properties of the Ni_3X ($\text{X}=\text{Mn, Al, Ga, Si, Ge}$) intermetallics	14 413
Dobrina Iotova, Nicholas Kioussis, and Say Peng Lim	
Divergence of classical trajectories and weak localization	14 423
I. L. Aleiner and A. I. Larkin	
Temperature dependence of electronic states in the t - J model	14 445
Hideki Matsumoto, Taiichiro Saikawa, and Ferdinando Mancini	
Magnetic polaron in ferro- and antiferromagnetic semiconductors	14 455
W. Nolting, S. Mathi Jaya, and S. Rex	

Semiconductors I: bulk

Evaluation of matrix elements of the 8×8 $\mathbf{k}\cdot\mathbf{p}$ Hamiltonian with $\mathbf{k}$ -dependent spin-orbit contributions for the zinc-blende structure of GaAs	14 467
T. E. Ostromek	
Electronic structure of ordered silicon alloys: Direct-gap systems	14 480
Kurt A. Johnson and N. W. Ashcroft	
Femtosecond investigation of the hot-phonon effect in GaAs at room temperature	14 487
P. Langot, N. Del Fatti, D. Christofilos, R. Tommasi, and F. Vallée	
Photoluminescence study of cadmium-related defects in oxygen-rich silicon	14 494
E. McGlynn, M. O. Henry, K. G. McGuigan, and M. C. doCarmo	
Substrate bias effects on the structural and electronic properties of tetrahedral amorphous carbon	14 504
E. G. Gerstner, P. B. Lukins, D. R. McKenzie, and D. G. McCulloch	

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

Structure and stability of steps on the GaAs(110) surface	14 511
J. M. McCoy and John P. LaFemina	
Magnetotransport coefficients in a two-dimensional SiGe hole gas	14 518
P. T. Coleridge, A. S. Sachrajda, H. Lafontaine, and Y. Feng	
Interband optical absorption in strained $\text{InAs}/\text{In}_x\text{Ga}_{1-x}\text{Sb}$ type-II superlattices	14 524
B. Jogai and D. N. Talwar	
Phase transitions in quantum dots	14 532
H.-M. Müller and S. E. Koonin	
Magnetophonons in short-period superlattices	14 540
P. Gassot, J. Genoe, D. K. Maude, J. C. Portal, K. S. H. Dalton, D. M. Symons, R. J. Nicholas, F. Aristone, J. F. Palmier, and F. Laruelle	
Electron dynamics in intentionally disordered semiconductor superlattices	14 550
Enrique Diez, Angel Sánchez, Francisco Domínguez-Adame, and Gennady P. Berman	
Cotunneling in single-electron devices: Effects of stray capacitances	14 560
G. Y. Hu and R. F. O'Connell	
Dispersion of bulk exciton polaritons in a semiconductor microcavity	14 566
M. R. Vladimirova, A. V. Kavokin, and M. A. Kaliteevski	
Time-domain theory of resonant Rayleigh scattering by quantum wells: Early-time evolution	14 572
D. S. Citrin	

(Continued)

CONTENTS - Continued

PHYSICAL REVIEW B

THIRD SERIES, VOLUME 54, NUMBER 20

15 NOVEMBER 1996-II

Percolation of carriers through low potential channels in thick $\text{Al}_x\text{Ga}_{1-x}\text{As}$ ($x < 0.35$) barriers	14 580
D. S. Kim, H. S. Ko, Y. M. Kim, S. J. Rhee, S. C. Hohng, Y. H. Yee, W. S. Kim, J. C. Woo, H. J. Choi, J. Ihm, D. H. Woo, and K. N. Kang	
Luminescence dynamics in type-II GaAs/AlAs superlattices near the type-I to type-II crossover	14 589
W. Langbein, H. Kalt, and J. M. Hvam	
Optimization of the confinement energy of quantum-wire states in T-shaped GaAs/ $\text{Al}_x\text{Ga}_{1-x}\text{As}$ structures	14 595
W. Langbein, H. Gislason, and J. M. Hvam	
Theory of the optical response of a dilute ensemble of semiconducting nanoparticles embedded in a dielectric matrix	14 604
Dirk Uwe Saenger	
Mode splitting in side emission from vertical-cavity surface-emitting lasers	14 618
D. T. Schaafsma and D. H. Christensen	
Microscopic calculation of valence-band states in semiconductor structures in the presence of a magnetic field	14 623
W.-C. Tan, J. C. Inkson, and G. P. Srivastava	
Luminescence from amorphous silicon nanostructures	14 633
M. J. Estes and G. Moddel	
Dielectric properties of the quasi-two-dimensional electron liquid in heterojunctions	14 643
C. Bulutay and M. Tomak	
Composition and structure of the $\text{GaN}\{0001\}-(1 \times 1)$ surface	14 652
M. M. Sung, J. Ahn, V. Bykov, J. W. Rabalais, D. D. Koleske, and A. E. Wickenden	
Instabilities of a persistent-photoconductivity semiconductor associated with heat transfer to a He-II film	14 664
M. Dong, D. Baum, and A. Honig	

Surface physics, low-dimensional systems, and related topics

Competing desorption pathways during epitaxial growth: LEEM investigation of Cu/W(110) heteroepitaxy	14 673
E. Z. Luo, Q. Cai, W. F. Chung, B. G. Orr, and M. S. Altman	
Oscillatory exchange coupling in Fe/Cr multilayers	14 679
M. D. Stiles	
Real-time x-ray-scattering measurement of the nucleation kinetics of cubic gallium nitride on $\beta\text{-SiC}(001)$	14 686
R. L. Headrick, S. Kycia, Y. K. Park, A. R. Woll, and J. D. Brock	
Determination of the atomic geometries of the (110) surfaces of CuCl and CuBr by dynamical low-energy electron diffraction intensity analysis	14 692
C. B. Duke, A. Paton, A. Lazarides, and A. Kahn	
Excitation of phonons and forward focusing in x-ray photoemission from the valence band	14 703
M. A. Vicente Alvarez, H. Ascolani, and G. Zampieri	
Structure of polygonal defects in graphitic carbon sheets	14 713
Sigeo Ihara, Satoshi Itoh, Kazuto Akagi, Ryo Tamura, and Masaru Tsukada	
Structural stability of adatom islands on fcc(111) transition-metal surfaces	14 720
S. Papadia, B. Piveteau, D. Spanjaard, and M. C. Desjonquères	
Theory of surface and interface transverse elastic waves in N -layer superlattices	14 728
E. H. El Boudouti, B. Djafari-Rouhani, A. Akjouj, and L. Dobrzynski	
Effects of crystalline microstructure on epitaxial growth	14 742
Jacques G. Amar and Fereydoon Family	
Structural and electrical properties of a metallic rough-thin-film system deposited on liquid substrates	14 754
Gao-xiang Ye, Qi-rui Zhang, Chun-mu Feng, Hong-liang Ge, and Zheng-kuan Jiao	
Simple model to calculate surface magnetization from spin-polarized metastable deexcitation spectroscopy: Fe/Ag(100)	14 758
M. Salvietti, R. Moroni, P. Ferro, M. Canepa, and L. Mattera	
Charge transfer in hyperthermal energy collisions of Li^+ with alkali-metal-covered Cu(001). I. Dynamics of charge state formation	14 765
E. R. Behringer, D. R. Andersson, B. H. Cooper, and J. B. Marston	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW B

THIRD SERIES, VOLUME 54, NUMBER 20

15 NOVEMBER 1996-II

Charge transfer in hyperthermal energy collisions of Li^+ with alkali-metal-covered Cu(001). II. Dynamics of excited-state formation	14 780
E. R. Behringer, D. R. Andersson, B. H. Cooper, and J. B. Marston	
Dynamic polarizability of small simple metal clusters in dielectric media	14 791
L. I. Kurkina and O. V. Farberovich	
Photoionization of metal clusters	14 796
M. Koskinen and M. Manninen	
Phonon contributions to photohole linewidths observed for surface states on copper	14 807
R. Matzdorf, G. Meister, and A. Goldmann	
Adsorption of CO on TiO_2 (110) studied by means of a cluster model surrounded by multipoles obtained from slab calculations	14 812
P. Reinhardt, M. Causà, C. M. Marian, and B. A. Heß	
Wave-function and level statistics of random two-dimensional gauge fields	14 822
J. A. Vergés	
Cumulative Author Index	14 833