

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 60, NUMBER 24

CONTENTS

15 DECEMBER 1999-II

RAPID COMMUNICATIONS

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

- Local field effects in optical excitations of semicore electrons R16 251
E. E. Krasovskii and W. Schattke
- Photonic band-structure effects in the reflectivity of periodically patterned waveguides R16 255
V. N. Astratov, D. M. Whittaker, I. S. Culshaw, R. M. Stevenson, M. S. Skolnick, T. F. Krauss, and
R. M. De La Rue
- Angle-dependent magnetoquantum oscillations in κ -(BEDT-TTF)₂Cu[N(CN)₂]Br R16 259
H. Weiss, M. V. Kartsovnik, W. Biberacher, E. Balthes, A. G. M. Jansen, and N. D. Kushch
- Temperature-dependent scattering rate and optical mass of ferromagnetic metallic manganites R16 263
J. R. Simpson, H. D. Drew, V. N. Smolyaninova, R. L. Greene, M. C. Robson, Amlan Biswas, and
M. Rajeswari

Semiconductors I: bulk

- Microscopic structure of oxygen defects in gallium arsenide R16 267
M. Pesola, J. von Boehm, V. Sammalkorpi, T. Mattila, and R. M. Nieminen
- Stability of nitrogen in ZnSe and its role in the degradation of ZnSe lasers R16 271
S. Gundel, D. Albert, J. Nürnberger, and W. Faschinger
- Oxygen isoelectronic impurity in ZnS_xTe_{1-x} R16 275
M. J. Seong, H. Alawadhi, I. Miotkowski, A. K. Ramdas, and S. Miotkowska

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

- Composite fermion description of rotating Bose-Einstein condensates R16 279
N. R. Cooper and N. K. Wilkin
- Atomic layering at the liquid silicon surface: A first-principles simulation R16 283
Gabriel Fabricius, Emilio Artacho, Daniel Sánchez-Portal, Pablo Ordejón, D. A. Drabold, and
José M. Soler
- Theory of the clean and hydrogenated Al₂O₃(0001)-(1×1) surfaces R16 287
Rosa Di Felice and John E. Northrup
- Nonadiabaticity and single-electron transport driven by surface acoustic waves R16 291
Karsten Flensberg, Qian Niu, and Michael Pustilnik
- Exciton exchange splitting in wide GaAs quantum wells R16 295
S. Glasberg, H. Shtrikman, I. Bar-Joseph, and P. C. Klipstein
- Localization effect in mesoscopic quantum dots and quantum-dot arrays R16 299
L.-H. Lin, N. Aoki, K. Nakao, A. Andresen, C. Prasad, F. Ge, J. P. Bird, D. K. Ferry, Y. Ochiai,
K. Ishibashi, Y. Aoyagi, and T. Sugano



Magneto-optical study of the exciton fine structure in self-assembled CdSe quantum dots	R16 303
J. Puls, M. Rabe, H.-J. Wünsche, and F. Henneberger	
Time-resolved imaging of the boundary excitations of a two-dimensional electron gas in a magnetic field	R16 307
A. A. Shashkin, A. J. Kent, P. Hawker, and M. Henini	
Theory of dephasing by external perturbation in open quantum dots	R16 311
Maxim G. Vavilov and Igor L. Aleiner	
Finite temperature effects in Coulomb blockade quantum dots and signatures of spectral scrambling	R16 315
Y. Alhassid and S. Malhotra	
Kondo-like zero-bias anomaly in electronic transport through an ultrasmall Si quantum dot	R16 319
L. P. Rokhinson, L. J. Guo, S. Y. Chou, and D. C. Tsui	
Spin-polarized transport and Andreev reflection in semiconductor/superconductor hybrid structures	R16 322
Igor Žutić and S. Das Sarma	
Giant anti-Stokes photoluminescence from semimagnetic heterostructures	R16 326
Wolfram Heimbrodt, Michael Happ, and Fritz Henneberger	

Surface physics, low-dimensional systems, and related topics

Quasicrystalline nature of quasicrystal surfaces: A photoemission study	R16 330
D. Naumović, P. Aebi, L. Schlappbach, C. Beeli, T. A. Lograsso, and D. W. Delaney	
Linear theory of unstable growth on rough surfaces	R16 334
J. Krug and M. Rost	
Mechanical deformations and coherent transport in carbon nanotubes	R16 338
Marco Buongiorno Nardelli and J. Bernholc	
Synthesis of epitaxial Fe ₃ O ₄ films on Cu(001)	R16 342
Richard L. Kurtz, J. Karunamuni, and R. L. Stockbauer	

ARTICLES

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

Evidence for replicate 5 <i>p</i> core levels in photoelectron spectra of Eu metal due to nonconstant kinetic-energy resonant Auger decay	16 346
S. Haffner, C. G. Olson, and D. W. Lynch	
Orbital-free kinetic-energy density functionals with a density-dependent kernel	16 350
Yan Alexander Wang, Niranjana Govind, and Emily A. Carter	
Electronic structure and heavy-fermion behavior in LiV ₂ O ₄	16 359
D. J. Singh, P. Blaha, K. Schwarz, and I. I. Mazin	
Series-expansion studies of the <i>t</i> - <i>J</i> two-leg ladder	16 364
J. Oitmaa, C. J. Hamer, and Zheng Weihong	
Inclusion of nonlocal correlations in the dynamical mean-field approach to finite-dimension systems	16 371
Minh-Tien Tran	
Spectral and transport properties of strongly correlated disordered systems	16 376
Karol I. Wysokiński	
No evidence of a metal-insulator transition in dense hot aluminum: A first-principles study	16 382
Pier Luigi Silvestrelli	
Anderson localization of surface plasmons and nonlinear optics of metal-dielectric composites	16 389
Andrey K. Sarychev, V. A. Shubin, and Vladimir M. Shalaev	
ESR experiments on the Kondo insulator CeNiSn	16 409
S. Mair, H.-A. Krug von Nidda, M. Lohmann, and A. Loidl	
Light-induced grating spectroscopy studies of hole transport in LaGaO ₃ crystals	16 415
A. Suchocki, L. Arizmendi, A. Durygin, and M. Berkowski	

Electronic structure, phase stability, and magnetic properties of $\text{La}_{1-x}\text{Sr}_x\text{CoO}_3$ from first-principles full-potential calculations	16 423
P. Ravindran, P. A. Korzhavyi, H. Fjellvåg, and A. Kjekshus	
Role of spectator decay and final-state mixing in resonant photoemission of La metal	16 435
S. L. Molodtsov, Yu. Kucherenko, J. J. Hinarejos, S. Danzenbächer, V. D. P. Servedio, M. Richter, and C. Laubschat	
Crystallography and density of states calculation of $M_x\text{Mo}_6\text{Se}_8$ ($M = \text{Ti, Cr, Fe, Ni}$)	16 442
C. Roche, R. Chevrel, A. Jenny, P. Pecheur, H. Scherrer, and S. Scherrer	
Coherent phase stability in Al-Zn and Al-Cu fcc alloys: The role of the instability of fcc Zn	16 448
S. Müller, L.-W. Wang, Alex Zunger, and C. Wolverton	

Semiconductors I: bulk

Structure and electronic properties of amorphous WO_3	16 463
G. A. de Wijs and R. A. de Groot	
$[\text{P}_{\text{In}}]^{(n)}$ antisite clustering in InP	16 475
T. M. Schmidt, R. H. Miwa, A. Fazzio, and R. Mota	
Doping-induced effects on the band structure in n -type 3C-, 2H-, 4H-, 6H-SiC, and Si	16 479
C. Persson, U. Lindefelt, and B. E. Sernelius	
Electronic properties of isostructural ruthenium and osmium silicides and germanides	16 494
A. B. Filonov, D. B. Migas, V. L. Shaposhnikov, N. N. Dorozhkin, V. E. Borisenko, A. Heinrich, and H. Lange	
Exciton localization in semimagnetic semiconductors probed by magnetic polarons	16 499
K. V. Kavokin, I. A. Merkulov, D. R. Yakovlev, W. Ossau, and G. Landwehr	
Exciton-dephasing kinetics after coherent pulse excitation	16 506
O. M. Schmitt, L. Bányai, and H. Haug	
Optically detected magnetophonon resonances in GaAs	16 513
G.-Q. Hai and F. M. Peeters	
Theoretical and experimental investigation of absorption and Raman spectra of poly(paraphenylene vinylene)	16 519
E. Mulazzi, A. Ripamonti, J. Wery, B. Dulieu, and S. Lefrant	
Ultrafast decay of coherent plasmon-phonon coupled modes in highly doped GaAs	16 526
Muneaki Hase, Shin-ichi Nakashima, Kohji Mizoguchi, Hiroshi Harima, and Kiyomi Sakai	
Real-time modulation of Si-H vibration in hydrogenated amorphous silicon	16 531
Hidetoshi Oheda	
Dispersive hole transport in organic photorefractive glasses	16 543
M. Grasruck, A. Schreiber, U. Hofmann, S. J. Zilker, A. Leopold, S. Schlöter, C. Hohle, P. Strohmriegel, and D. Haarer	

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

Spin-accumulation-induced resistance in mesoscopic ferromagnet-superconductor junctions	16 549
F. J. Jedema, B. J. van Wees, B. H. Hoving, A. T. Filip, and T. M. Klapwijk	
Core-level photoemission spectroscopy of the β -SiC(100) $c(4 \times 2)$ surface	16 553
V. Yu. Aristov, H. Enriquez, V. Derycke, P. Soukiasian, G. Le Lay, C. Grupp, and A. Taleb-Ibrahimi	
Atomic view of Ge on the monohydride Si(001)-(2 $\times$ 1) surface	16 558
S.-J. Kahng, J.-Y. Park, and Y. Kuk	
Resonant exciton contributions to quantum-well electroabsorption	16 563
Witold Bardyszewski, David Yevick, Claude Rolland, and Emmanuel Dupont	

Ground-state energy of an exciton-(LO) phonon system in a parabolic quantum well	16 569
B. Gerlach, J. Wüsthoff, and M. A. Smondyrev	
Interaction of Wannier-Stark ladders and electrical breakdown in superlattices	16 584
S. Glutsch and F. Bechstedt	
Influence of the shape of quantum dots on their far-infrared absorption	16 591
Ingibjörg Magnúsdóttir and Vidar Gudmundsson	
Inhomogeneous strain relaxation in triple-barrier p -Si/SiGe nanostructures	16 597
C. D. Akyüz, H. T. Johnson, A. Zaslavsky, L. B. Freund, and D. A. Syphers	
Retardation effects on intra- and intersubband plasmons in quantum wells and their manifestations in grating-coupler-assisted optical transmission	16 603
L. Wendler and T. Kraft	
Wigner crystalline edges in $\nu \leq 1$ quantum dots	16 611
Eyal Goldmann and Scot R. Renn	
Near-band-gap CuPt-order-induced birefringence in $\text{Al}_{0.48}\text{Ga}_{0.52}\text{InP}_2$	16 618
Mathias Schubert, Tino Hofmann, Bernd Rheinländer, Ines Pietzonka, Torsten Sass, Volker Gottschalch, and John A. Woollam	
Electric-field-induced anti-Stokes photoluminescence in an asymmetric GaAs/(Al,Ga)As double quantum well superlattice	16 635
L. Schrottke, R. Hey, and H. T. Grahn	
Optical investigations of individual InAs quantum dots: Level splittings of exciton complexes	16 640
L. Landin, M.-E. Pistol, C. Pryor, M. Persson, L. Samuelson, and M. Miller	
Inhibited carrier transfer in ensembles of isolated quantum dots	16 647
C. Lobo, R. Leon, S. Marcinkevičius, W. Yang, P. C. Sercel, X. Z. Liao, J. Zou, and D. J. H. Cockayne	
Energy states in ZnSe-GaAs heterovalent quantum structures	16 652
Mitsuru Funato, Shizuo Fujita, and Shigeo Fujita	
Two-dimensional exciton dynamics and gain formation processes in $\text{In}_x\text{Ga}_{1-x}\text{N}$ multiple quantum wells	16 660
Akihiro Satake, Yasuaki Masumoto, Takao Miyajima, Tsunenori Asatsuma, and Masao Ikeda	
Transient four-wave mixing in T-shaped GaAs quantum wires	16 667
W. Langbein, H. Gislason, and J. M. Hvam	
Optical gain in GaN quantum wells with many-body effects	16 675
G. B. Ren and Peter Blood	
Optical anisotropy in vertically coupled quantum dots	16 680
P. Yu, W. Langbein, K. Leosson, J. M. Hvam, N. N. Ledentsov, D. Bimberg, V. M. Ustinov, A. Yu. Egorov, A. E. Zhukov, A. F. Tsatsul'nikov, and Yu. G. Musikhin	
Influence of the backward-pump process on photon-number squeezing in a constant-current-driven heterojunction LED: Transition from thermionic emission to diffusion limits	16 686
Masahide Kobayashi, Masamichi Yamanishi, Hiroyuki Sumitomo, and Yutaka Kadoya	
Evaluation of strain distribution in freestanding and buried lateral nanostructures	16 701
A. Ulyanenko, N. Darowski, J. Grenzer, U. Pietsch, K. H. Wang, and A. Forchel	
Percolation problem in atomic transport in $\text{Hg}_{1-x}\text{Cd}_x\text{Te}$	16 715
N. Mainzer and E. Zolotoyabko	
Self-normalizing methods of photoelectron holography applied to As/Si(111)	16 722
D.-A. Luh, T. Miller, and T.-C. Chiang	
Electrochemical capacitance of a leaky nanocapacitor	16 730
Xuean Zhao, Jian Wang, and Hong Guo	
Direct evidence of tensile strain in wurtzite structure n -GaN layers grown on n -Si(111) using AlN buffer layers	16 741
B. H. Bairamov, O. Gürdal, A. Botchkarev, H. Morkoç, G. Irmer, and J. Monecke	
Resonant Raman scattering in self-assembled quantum dots	16 747
E. Menéndez-Proupin, C. Trallero-Giner, and S. E. Ulloa	

State mixing for quasiparticles at surfaces: Nonperturbative GW approximation	16 758
Olivia Pulci, Friedhelm Bechstedt, Giovanni Onida, Rodolfo Del Sole, and Lucia Reining	
Theory of magnetoacoustic transport in modulated quantum Hall systems near $\nu = 1/2$	16 762
Nataliya A. Zimbovskaya and Joseph L. Birman	
Topological universality of level dynamics in quasi-one-dimensional disordered conductors	16 774
E. Kanzieper and V. E. Kravtsov	
Propagation of exciton polaritons in inhomogeneous semiconductor films	16 788
Guillaume Malpuech, Alexey Kavokin, and Giovanna Panzarini	
Quantum theory of exciton polaritons in cylindrical semiconductor microcavities	16 799
Giovanna Panzarini and Lucio Claudio Andreani	
(Mis-)handling gauge invariance in the theory of the quantum Hall effect.	
I. Unifying action and the $\nu = \frac{1}{2}$ state	16 807
A. M. M. Pruiskien, M. A. Baranov, and B. Skorić	
(Mis-)handling gauge invariance in the theory of the quantum Hall effect. II. Perturbative results	16 821
M. A. Baranov, A. M. M. Pruiskien, and B. Skorić	
(Mis-)handling gauge invariance in the theory of the quantum Hall effect. III. The instanton vacuum and chiral-edge physics	16 838
A. M. M. Pruiskien, B. Skorić, and M. A. Baranov	
Features of renormalization induced by interaction in one-dimensional transport	16 865
V. V. Ponomarenko and N. Nagaosa	
Photon-assisted quasiparticle transport and Andreev transport through an interacting quantum dot	16 874
Sam Young Cho, Kicheon Kang, and Chang-Mo Ryu	
Electronic transport in a three-dimensional network of one-dimensional bismuth quantum wires	16 880
T. E. Huber and M. J. Graf	
Electron and hole microwave cyclotron resonance in photoexcited undoped GaAs/Al _{0.3} Ga _{0.7} As multiple quantum wells	16 885
M. Kozhevnikov, E. Cohen, Arza Ron, and Hadas Shtrikman	
Exciton-electron dynamics studied by microwave photoconductivity and photoluminescence in undoped GaAs/Al _{0.3} Ga _{0.7} As quantum wells	16 894
M. Kozhevnikov, B. M. Ashkinadze, E. Cohen, Arza Ron, and Hadas Shtrikman	
Nonlinear voltage dependence of shot noise	16 900
Yadong Wei, Baigeng Wang, Jian Wang, and Hong Guo	
Conductance suppression due to correlated electron transport in coupled double quantum dots	16 906
Géza Tóth, Alexei O. Orlov, Islamshah Amlani, Craig S. Lent, Gary H. Bernstein, and Gregory L. Snider	

Surface physics, low-dimensional systems, and related topics

Integration of point-contact microscopy and atomic-force microscopy: Application to characterization of graphite/Pt(111)	16 913
M. Enachescu, D. Schleef, D. F. Ogletree, and M. Salmeron	
C ₆₀ one- and two-dimensional polymers, dimers, and hard fullerite: Thermal expansion, anharmonicity, and kinetics of depolymerization	16 920
P. Nagel, V. Pasler, S. Lebedkin, A. Soldatov, C. Meingast, B. Sundqvist, P.-A. Persson, T. Tanaka, K. Komatsu, S. Buga, and A. Inaba	
Thermodynamic behavior of the carbon schwarzite fcc (C ₃₆) ₂	16 928
Vittorio Rosato, Massimo Celino, Giorgio Benedek, and Sabrina Gaito	
Adsorption and growth of Xe adlayers on the Cu(111) surface	16 934
Ji-Yong Park, S.-J. Kahng, U. D. Ham, Y. Kuk, K. Miyake, K. Hata, and H. Shigekawa	
Heteroepitaxial strain in alkali halide thin films: KCl on NaCl	16 941
Jeff Baker and Per-Anker Lindgård	

Identification of key parameters by comparing experimental and simulated growth of vapor-deposited amorphous $\text{Zr}_{65}\text{Al}_{7.5}\text{Cu}_{27.5}$ films	16 950
S. G. Mayr, M. Moske, and K. Samwer	
Real-time x-ray scattering study of surface morphology evolution during ion erosion and epitaxial growth of Au(111)	16 956
M. V. Ramana Murty, T. Curcic, A. Judy, B. H. Cooper, A. R. Woll, J. D. Brock, S. Kycia, and R. L. Headrick	
Solution of the Langevin equation for rare event rates using a path-integral formalism	16 965
L. Y. Chen and S. C. Ying	
Molecular-dynamics study of the C-H vibrational spectra on diamond (111) and (100) surfaces	16 972
M.-H. Tsai, J. C. Jiang, and S. H. Lin	
Structure factor of thin films near continuous phase transitions	16 977
R. Klimpel and S. Dietrich	
Adsorption of N_2 on a porous silica substrate studied by a quartz-crystal microbalance	17 003
Yongho Seo and Insuk Yu	
Equilibrium shapes and energies of coherent strained InP islands	17 008
Q. K. K. Liu, N. Moll, M. Scheffler, and E. Pehlke	
Reentrant morphological instability of epitaxial islands	17 016
Alberto Pimpinelli and Riccardo Ferrando	
Surface-sensitive <i>K</i> -edge absorption spectroscopy on clean and hydrogen-terminated diamond (111) and (100) surfaces	17 023
R. Graupner, J. Ristein, L. Ley, and Ch. Jung	
Photoemission study of Fermi surfaces of pseudomorphic Co, Ni, and $\text{Co}_x\text{Ni}_{1-x}$ films on Cu(100)	17 030
Michael Hochstrasser, Nat Gilman, Roy F. Willis, Frank O. Schumann, James G. Tobin, and Eli Rotenberg	
Properties and dynamics of the image potential states on graphite investigated by multiphoton photoemission spectroscopy	17 037
J. Lehmann, M. Merschdorf, A. Thon, S. Voll, and W. Pfeiffer	
Local-field study of phase conjugation in metallic quantum wells with probe fields of both propagating and evanescent character	17 046
Torsten Andersen and Ole Keller	
Conduction channels at finite bias in single-atom gold contacts	17 064
Mads Brandbyge, Nobuhiko Kobayashi, and Masaru Tsukada	
Linear and nonlinear optical susceptibilities of Maxwell Garnett composites: Dipolar spectral theory	17 071
Mark I. Stockman, Konstantin B. Kurlayev, and Thomas F. George	
Experimental and theoretical study of electron momentum density of $A_n\text{C}_{60}$ ($n=3,4$) and comparison to pristine C_{60}	17 084
M. Marangolo, Ch. Bellin, G. Louprias, S. Rabii, S. C. Erwin, and Th. Buslaps	
Photon emission from metal surfaces induced by electron capture of slow ions at grazing incidence	17 091
Kaoru Shimizu	
Photoemission study of the effect of annealing temperature on a $\text{K}_2\text{O}_2/\text{Si}(100)$ surface	17 102
J. X. Wu, M. S. Ma, H. G. Zheng, H. W. Yang, J. S. Zhu, and M. R. Ji	
Quadrupolar vibrational mode of silver clusters from plasmon-assisted Raman scattering	17 107
B. Palpant, H. Portales, L. Saviot, J. Lermé, B. Prével, M. Pellarin, E. Duval, A. Perez, and M. Broyer	
<i>Ab initio</i> study of the $\text{CoSi}_2(111)/\text{Si}(111)$ interface	17 112
R. Stadler, D. Vogtenhuber, and R. Podloucky	
Theoretical study of the electronic and molecular structures of boron and carbon penta-hepta-membered ring networks and ScBC clusters	17 123
Jo Takeuchi, Norihiko Takahashi, and Kyozauro Takeda	

CONTENTS - *Continued*

PHYSICAL REVIEW B

THIRD SERIES, VOLUME 60, NUMBER 24

15 DECEMBER 1999-II

Electrodynamics of carbon nanotubes: Dynamic conductivity, impedance boundary conditions, and surface wave propagation 17 136

G. Ya. Slepyan, S. A. Maksimenko, A. Lakhtakia, O. Yevtushenko, and A. V. Gusakov

Structural and magnetic properties of epitaxial Cu/Fe/Cu/Si(111) ultrathin films 17 150

G. Gubbiotti, L. Albini, S. Tacchi, G. Carlotti, R. Gunnella, and M. De Crescenzi

Errata

Erratum: Orbital-free kinetic-energy functionals for the nearly free electron gas

[Phys. Rev. B **58**, 13 465 (1998)] 17 162

Yan Alexander Wang, Niranjana Govind, and Emily A. Carter

Cumulative Author Index 17 164