

RAPID COMMUNICATIONS

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

- One-dimensional localization in the presence of resonances R5265
Brahim Elattari and Tsampikos Kottos
- First-principles study of the electronic structure of the organic solids $(\text{CH}_3)_4\text{N}[M(\text{dmit})_2]_2$ ($M = \text{Ni}$ and
Pd): Role of dimerization and the stability of the formation of a dimer R5269
Tsuyoshi Miyazaki and Takahisa Ohno
- Incremental expansions for the ground-state energy of the two-dimensional Hubbard model R5273
Jiri Malek, Sergej Flach, and Konstantin Kladko
- Metal-insulator transition in a multilayer system with a strong magnetic field R5277
X. R. Wang, C. Y. Wong, and X. C. Xie
- Phase diagram of the metal-insulator transition in two-dimensional electronic systems R5280
J. S. Thakur and D. Neilson

Semiconductors I: bulk

- Stimulated emission in high-gain organic media R5284
S. V. Frolov, Z. V. Vardeny, K. Yoshino, A. Zakhidov, and R. H. Baughman

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

- Creation of highly anisotropic wave packets in quantum wells: Dynamical Franz-Keldysh effect in the optical and
terahertz regimes R5288
S. Hughes and D. S. Citrin
- Probing the disilane adsorption kinetics: An alternative approach R5292
R. W. Price, E. S. Tok, and J. Zhang
- Very-low-energy electron diffraction on the H-terminated Si(111) surface: *Ab initio* pseudopotential analysis R5296
V. N. Strocov, S. Mankefors, P. O. Nilsson, J. Kanski, L. Ilver, and H. I. Starnberg
- Optical anisotropy in self-assembled InP quantum dots R5300
Mitsuru Sugisaki, Hong-Wen Ren, Selvakumar V. Nair, Kenichi Nishi, Shigeo Sugou, Tsuyoshi Okuno,
and Yasuaki Masumoto
- Variation of elastic scattering across a quantum well R5304
G. Salis, P. Wirth, T. Heinzl, T. Ihn, K. Ensslin, K. Maranowski, and A. C. Gossard
- Indium segregation effects in (111)B-grown (In,Ga)As/GaAs piezoelectric quantum wells R5308
Philippe Ballet, Pierre Disseix, Joël Leymarie, Aimé Vasson, Anne-Marie Vasson, and Robert Grey
- Spin splitting of conduction subbands in III-V heterostructures due to inversion asymmetry R5312
P. Pfeffer and W. Zawadzki



Femtosecond coherent emission from GaAs bulk microcavities	R5316
Massimo Gurioli, Franco Bogani, Simone Ceccherini, Marcello Colocci, Fabio Beltram, and Lucia Sorba	

Surface physics, low-dimensional systems, and related topics

Scanning-tunneling-microscopy images: A fully <i>ab initio</i> approach	R5320
Massimiliano Di Ventra and Sokrates T. Pantelides	
Structure of the H-induced vacancy reconstruction of the (0001) surface of beryllium	R5324
Karsten Pohl and E. Ward Plummer	

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

Numerical study of relaxation in electron glasses	5328
A. Pérez-Garrido, M. Ortuño, A. Díaz-Sánchez, and E. Cuevas	
Coulomb-correlated band structure of one-dimensional spin-Peierls α' -NaV ₂ O ₅	5333
Zoran S. Popović and Filip R. Vukajlović	
Non-Fermi-liquid regime of a doped Mott insulator	5341
Olivier Parcollet and Antoine Georges	
Band structure of TiB ₂ : Orientation-dependent EELS near-edge fine structure and the effect of the core hole at the B K edge	5361
K. Lie, R. Brydson, and H. Davock	
Density of states of hole-doped manganites: A scanning-tunneling-microscopy/spectroscopy study	5368
Amlan Biswas, Suja Elizabeth, A. K. Raychaudhuri, and H. L. Bhat	
Correlation functions of higher-dimensional Luttinger liquids	5377
Lorenz Bartosch and Peter Kopietz	
Dynamical correlation-hole approach to the Hubbard model	5384
M. C. Refolio, J. M. López Sancho, J. Rubio, and M. P. López Sancho	
Theory for metal hydrides with switchable optical properties	5398
K. K. Ng, F. C. Zhang, V. I. Anisimov, and T. M. Rice	
Plasmon excitations in quasi-one-dimensional K _{0.3} MoO ₃	5414
M. Sing, V. G. Grigoryan, G. Paasch, M. Knupfer, J. Fink, B. Lommel, and W. Aßmus	
Memorization of short-range potential fluctuations in Landau levels	5426
Andrei Manolescu and Vidar Gudmundsson	
Charge-ordered state from weak to strong coupling	5431
S. Ciuchi and F. de Pasquale	
<i>Ab initio</i> calculation of $\epsilon_2(\omega)$ including the electron-hole interaction: Application to GaN and CaF ₂	5441
Lorin X. Benedict and Eric L. Shirley	
Probing electron correlation, charge transfer, and Coster-Kronig transitions at the 3 <i>d</i> and 4 <i>d</i> thresholds of Nd by resonant inelastic scattering	5452
A. Moewes, D. L. Ederer, M. M. Grush, and T. A. Callcott	
Photoionization cross sections of charge-induced gap states: A theoretical study of doped diphenylpolyenes	5457
Li Yang, Olav Vahtras, and Hans Ågren	
Effect of size nonuniformities on the band gap of two-dimensional photonic crystals	5463
Han-Youl Ryu, Jeong-Ki Hwang, and Yong-Hee Lee	
Layer KKR approach to Bloch-wave transmission and reflection: Application to spin-dependent tunneling	5470
J. M. MacLaren, X.-G. Zhang, W. H. Butler, and Xindong Wang	

Semiconductors I: bulk

Diffraction-anomalous-fine-structure spectroscopy applied to the study of III-V strained semiconductors	5479
M. G. Proietti, H. Renevier, J. L. Hodeau, J. García, J. F. Béar, and P. Wolfers	
Exchange of deeply trapped and interstitial hydrogen in silicon	5493
Blair Tuttle, Chris G. Van de Walle, and James B. Adams	
Hydrogen collision model: Quantitative description of metastability in amorphous silicon	5498
Howard M. Branz	
Light-induced D diffusion measurements in hydrogenated amorphous silicon: Testing H metastability models	5513
Howard M. Branz, Sally Asher, Helena Gleskova, and Sigurd Wagner	
Density-functional calculations for III-V nitrides using the local-density approximation and the generalized gradient approximation	5521
C. Stampfl and C. G. Van de Walle	
Band-structure calculations for semiconductors within generalized-density-functional theory	5536
I. N. Remediakis and Efthimios Kaxiras	
Complex loss function of CdTe	5544
H. Dröge, A. Fleszar, W. Hanke, M. Sing, M. Knupfer, J. Fink, F. Goschenhofer, C. R. Becker, R. Kargerbauer, and H. P. Steinrück	
Silver-hydrogen interactions in crystalline silicon	5551
N. Yarykin, J.-U. Sachse, H. Lemke, and J. Weber	
Origin of defect-related photoluminescence bands in doped and nominally undoped GaN	5561
U. Kaufmann, M. Kunzer, H. Obloh, M. Maier, Ch. Manz, A. Ramakrishnan, and B. Santic	
Excitonic exchange splitting in bulk semiconductors	5568
Huaxiang Fu, Lin-Wang Wang, and Alex Zunger	
Deformation potentials of the E_1 transition in Ge, GaAs, InP, ZnSe, and ZnTe from <i>ab initio</i> calculations	5575
D. Rönnow, N. E. Christensen, and M. Cardona	
Piezo-optical coefficients of ZnSe and ZnTe above the fundamental gap	5581
D. Rönnow, M. Cardona, and L. F. Lastras-Martínez	
Interface magnetization effect in heterojunctions based on semimagnetic compounds	5591
N. Malkova	

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

First-principles simulation of Se and Te adsorbed on GaAs(001)	5602
S. Gundel and W. Faschinger	
Scanning-tunneling-microscope study on the {111} cross-sectional surface of Si/Ge layered material	5612
M. Ohmori, H. Hirayama, and K. Takayanagi	
Structural transition layer at SiO ₂ /Si interfaces	5617
K. Hirose, H. Nohira, T. Koike, K. Sakano, and T. Hattori	
Many-body wave function for a quantum dot in a weak magnetic field	5622
A. Harju, V. A. Sverdlov, R. M. Nieminen, and V. Halonen	
Phase transitions of electron-hole and unbalanced electron systems in coupled quantum wells in high magnetic fields	5627
Yu. E. Lozovik, O. L. Berman, and V. G. Tsvetus	
Quantum-well shape optimization for intersubband-related electro-optic modulation properties	5637
J. Radovanović, V. Milanović, Z. Ikonić, and D. Indjin	
Frictional drag between spatially separated two-dimensional electron gases mediated by virtual-phonon exchange	5643
Samvel M. Badalyan and Ulrich Rössler	
Inhomogeneous structure of the nonlocal dynamic dielectric response of a quantum-well bound state and a three-dimensional band of extended states	5648
Norman J. Morgenstern Horing	

Stability of two- and three-dimensional excitonic complexes	5652
J. Usukura, Y. Suzuki, and K. Varga	
Optical response of excitonic polaritons in photonic crystals	5662
S. Nojima	
Electronic structures of [110]-faceted self-assembled pyramidal InAs/GaAs quantum dots	5678
Lin-Wang Wang, Jeongnim Kim, and Alex Zunger	
Electronic and optical properties of strained quantum dots modeled by 8-band k·p theory	5688
O. Stier, M. Grundmann, and D. Bimberg	
Crystal anisotropy effects on the weak-localization magnetoresistance of a III-V semiconductor quantum well in a magnetic field parallel to interfaces	5702
A. G. Mal'shukov, V. A. Frolov, and K. A. Chao	
Single-particle relaxation time in a spatially fluctuating magnetic field	5711
G. M. Gusev, J. R. Leite, A. A. Bykov, N. T. Moshegov, V. M. Kudryashev, A. I. Toropov, and Yu. V. Nastaushchev	
Correlation and symmetry effects in transport through an artificial molecule	5717
F. Ramírez, E. Cota, and S. E. Ulloa	
Strong charge fluctuations in the single-electron box: A quantum Monte Carlo analysis	5728
Carlos P. Herrero, Gerd Schön, and Andrei D. Zaikin	
Anomalous frequency-dependent conductivity near the quantum Hall transition	5738
Giancarlo Jug and Klaus Ziegler	
Carrier recombination rates in narrow-gap InAs/Ga _{1-x} In _x Sb-based superlattices	5745
Michael E. Flatté, C. H. Grein, T. C. Hasenberg, S. A. Anson, D.-J. Jang, J. T. Olesberg, and Thomas F. Boggess	
Electric-field distribution in Au-semi-insulating GaAs contact investigated by positron-lifetime technique	5751
C. C. Ling, Y. F. Shek, A. P. Huang, S. Fung, and C. D. Beling	
Degenerate four-wave-mixing signals from a dc- and ac-driven semiconductor superlattice	5759
Ren-Bao Liu and Bang-Fen Zhu	
Excitonic Bloch oscillations in a terahertz field	5770
M. M. Dignam	
Faraday rotation and interface enhancement effects in diluted-magnetic-semiconductor superlattices	5784
W. E. Hagston, T. Stirner, and Jingqi Miao	
Direct insertion of SiH ₃ radicals into strained Si-Si surface bonds during plasma deposition of hydrogenated amorphous silicon films	5791
Achim von Keudell and John R. Abelson	
Intrinsic electric fields and Raman spectra of III-V nitride wurtzite semiconductor heterostructures	5799
D. Coffey and N. Bock	
Delayed intersubband relaxation in quantum wires due to quantum kinetic Coulomb scattering	5806
F. Pregel and E. Schöll	
Vertically coupled double quantum dots in magnetic fields	5817
Hirosi Imamura, Peter A. Maksym, and Hideo Aoki	
Magnetic and transport properties of the ferromagnetic semiconductor heterostructures (In,Mn)As/(Ga,Al)Sb	5826
A. Oiwa, A. Endo, S. Katsumoto, Y. Iye, H. Ohno, and H. Munekata	

Surface physics, low-dimensional systems, and related topics

Electron-energy-loss spectroscopy of plasmon excitations in concentric-shell fullerenes	5832
L. Henrard, F. Malengreau, P. Rudolf, K. Hevesi, R. Caudano, Ph. Lambin, and Th. Cabioc'h	
Spatial self-organization of a nanoscale structure on the Pt(111) surface	5837
L. P. Zhang, J. van Ek, and U. Diebold	
Dehydrogenation and the surface phase transition on diamond (111): Kinetics and electronic structure	5847
J. B. Cui, J. Ristein, and L. Ley	

Holographic atomic images from surface and bulk W(110) photoelectron diffraction data	5857
P. M. Len, J. D. Denlinger, E. Rotenberg, S. D. Kevan, B. P. Tonner, Y. Chen, M. A. Van Hove, and C. S. Fadley	
Monte Carlo investigation of island growth in strained layers	5871
Sovirith Tan and Pui-Man Lam	
Surface x-ray-diffraction study of the Rh(111)+(2×2)-3CO structure	5876
E. Lundgren, X. Torrelles, J. Alvarez, S. Ferrer, H. Over, A. Beutler, and J. N. Andersen	
Jumps and concerted moves in Cu, Ag, and Au(110) adatom self-diffusion	5881
F. Montalenti and R. Ferrando	
Adsorption-induced lattice relaxation and diffusion by concerted substitution	5892
Peter J. Feibelman and Roland Stumpf	
Combined He-atom scattering and theoretical study of the low-energy vibrations of physisorbed monolayers of Xe on Cu(111) and Cu(001)	5898
A. Siber, B. Gumhalter, J. Braun, A. P. Graham, M. F. Bertino, J. P. Toennies, D. Fuhrmann, and Ch. Wöll	
Reflection and transmission of waves in surface-disordered waveguides	5915
J. A. Sánchez-Gil, V. Freilikher, A. A. Maradudin, and I. V. Yurkevich	
Direct and indirect excitation mechanisms in two-photon photoemission spectroscopy of Cu(111) and CO/Cu(111)	5926
M. Wolf, A. Hotzel, E. Knoesel, and D. Velic	
Magneto-optical effects in multilayers illuminated by total internal reflection	5936
N. Richard, A. Dereux, T. David, E. Bourillot, J. P. Goudonnet, F. Scheurer, E. Beaurepaire, and G. Garreau	
Modification of multiwall carbon nanotubes by electron irradiation: An ESR study	5945
F. Beuneu, C. l'Huillier, J.-P. Salvetat, J.-M. Bonard, and L. Forró	
Strain in single-crystal RFe ₂ (110) thin films (R=Y, Sm, Gd, Tb, Dy _{0.7} Tb _{0.3} , Dy, Er, Lu)	5950
A. Mougin, C. Dufour, K. Dumesnil, N. Maloufi, Ph. Mangin, and G. Patrat	
Reaction channels for the catalytic oxidation of CO on Pt(111)	5960
A. Eichler and J. Hafner	
Cumulative Author Index	5968