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**RECENT PAPERS SUBMITTED AND
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NOVEMBER 1986

ACCELERATOR AND FUSION RESEARCH

Journal Submissions

LBL-21791 Preprint (K) Focusing of Synchrotron Radiation X-ray Beams Using Synthetic Multilayer Mirrors, Oct. 1986, 5p. To be published in *Nucl. Instrum. Methods Phys. Res.*, A.C. Thompson, Y. Wu, and J.H. Underwood, (LBL) T.W. Barbee, Jr., (LLNL) UC34A

Conference Reports/Books

LBL-21230 Report (K) Evaluation of Various Fabrication Techniques for Fabrication of Fine Filament NbTi Superconductors, Sept. 1986, 6p. Presented at the 1986 Applied Superconductivity Conference, Baltimore, MD, September 29-October 3, 1986, R.M. Scanlan, J. Royet, and R. Hannaford, (LBL) UC28

LBL-21292 Report (K) Magnetic Field Measurements of Model SSC Dipoles, Oct. 1986, 4p. Presented at the 1986 Applied Superconductivity Conference, Baltimore, MD, September 29-October 3, 1986, W.V. Hassenzahl, W.S. Gilbert, M.I. Green, and P.J. Barle, (LBL) UC38

LBL-21293 Report (K) Heater Induced Quenches in SSC Model Dipoles, Oct. 1986, 5p. Presented at the 1986 Applied Superconductivity Conference, Baltimore, MD, September 29-October 3, 1986, W.V. Hassenzahl, (LBL) UC28

LBL-21294 Report (K) 1.8K Conditioning (Non-Quench Training) of Model SSC Dipoles, Sept. 1986, 5p. Presented at the 1986 Applied Superconductivity Conference, Baltimore, MD, September 29-October 3, 1986, W.S. Gilbert and W.V. Hassenzahl, (LBL) UC28

LBL-21295 Report (K) Manufacture of Keystoned Flat Superconducting Cables for Use in SSC Dipoles, Sept. 1986, 5p. Presented at the 1986 Applied Superconductivity Conference, Baltimore, MD, September 29-October 3, 1986, J. Royet and R.M. Scanlan, (LBL) UC28

LBL-21296 Report (K) The Effects of Filament Magnetization in Superconducting Magnets as Calculated by POISSON, Sept. 1986, 5p. Presented at the 1986 Applied Superconductivity Conference, Baltimore, MD, September 29-October 3, 1986, S. Caspi, W.S. Gilbert, M. Helm, and L.J. Laslett, (LBL) UC28

LBL-21297 Report (K) Development of a 40 mm Bore Magnet Cross Section with High Field Uniformity for the 6.6T SSC Dipole, Sept. 1986, 5p. Presented at the 1986 Applied Superconductivity Conference, Baltimore, MD, September 29-October 3, 1986, S. Caspi, W. Gilbert, M. Helm, L.J. Laslett, and C. Taylor, (LBL) UC28

LBL-21472 Rev. Report (K) Variational Formulation of Covariant Eikonal Theory for Vector Waves, Oct. 1986, 11p. Presented at the Fourth Symposium on Energy Engineering Sciences, Argonne, IL, May 7-9, 1986; and submitted to *Phys. Lett. A*, A.N. Kaufman, H. Ye, and Y. Hui, (LBL and UCB) UC34

LBL-21758 Report (K) Pulser Development for MBE-4, June 1986, 7p. Presented at the 1986 Seventeenth Power Modulator Symposium, Seattle, WA, June 23-25, 1986, D.E. Gough and D.A. Brodzik, (LBL) UC28

LBL-22228 Report (K) Varied-Space Grazing Incidence Gratings in High Resolution Scanning Spectrometers, Oct. 1986, 23p. Presented at the AIP Third Topical Meeting on Short Wavelength Coherent Radiation: Generation and Applications, Monterey, CA, March 24-27, 1986; and to be published in the Proceedings 147, D.T. Attwood and J. Bokor, Eds., American Institute of Physics, May 1986, M.C. Hettrick and J.H. Underwood, (LBL) UC34A

LBL-22317 Report (K) Brightness and Coherence of Synchrotron Radiation and High-Gain Free Electron Lasers, Oct. 1986, 23p. Presented at the VII National Conference on Synchrotron Radiation (SR-86), Novosibirsk, USSR, June 3-5, 1986, K.-J. Kim, (LBL) UC34A

Other Reports

LBL-22295 Report (K) Center for X-Ray Optics 1985, Sept. 1986, 15p. UC13

LBL-22421 Report (K) Heavy-Ion Fusion System Assessment Project: Quarterly Status Report, January 1-March 31, 1986, Oct. 1986, 4p. 28, E.P. Lee, J. Hovingh, A. Faltens, and D. Keefe, (LBL) UC28

APPLIED SCIENCE

Journal Submissions

LBL-18524 (J) The Effect of Variations in Convection Coefficients on Thermal Energy Storage in Buildings. Part II.--Exterior Massive Walls and Simulations, July 1986, 19p. Submitted to *Energy Build.*, H. Akbari, D. Samano, A. Mertol, and R. Kammerud, (LBL) F. Bauman, (UCB) UC59b

LBL-18930 (J) Characterization of Binding Sites of Vanadium Compounds in Heavy Crude Petroleum Extracts by Electron Paramagnetic Resonance Spectroscopy, Apr. 1986, 30p. Submitted to *Energy Fuels*, J.G. Reynolds and E.J. Gallegos, (Richmond, CA) R.H. Fish and J.J. Komlenic, (LBL) UC34A

LBL-20424 Preprint (J) Relating Actual and Effective Ventilation in Determining Indoor Air Quality, Sept. 1986, 28p. Submitted to *Build. Environ.*, M.H. Sherman and D.J. Wilson, (LBL) UC95d

LBL-21392 (J) Intra- and Intermolecular Energy Transfer in $H_2 + OH$ Collisions, June 1986, 49p. Submitted to *J. Chem. Phys.*, N.J. Brown and O. Rashed, (LBL) UC4

LBL-22478 (J) Characterization of Sources and Emissions in Field Studies, Nov. 1986, 2p. Submitted to *Atmos. Environ.*, 20, D.T. Grimsrud, (LBL) UC95d

Conference Reports/Books

LBL-17376 Report (J) Determining the U-Value of a Wall from Field Measurements of Heat Flux and Surface Temperatures, May 1986, 25p. Presented at the ASTM Workshop on Heat Flow Sensors, Philadelphia, PA, September 19-23, 1986; and to be published in ASTM STP 885, M.P. Modera, M.H. Sherman, and R.C. Sonderegger, (LBL) UC95d

LBL-21886 Report (J) Analyzing Energy Conservation Retrofits in Public Housing: Savings, Cost-Effectiveness, and Policy Implications, July 1986, 33p. Presented at the ACEEE 1986 Summer Study, Santa Cruz, CA, August 17-22, 1986, K.M. Greely, C.A. Goldman, and R.L. Ritschard, (LBL) UC95d

Other Reports

LBL-22372 Report (J) Design Options for Energy Efficiency Improvement of Residential Appliances, Oct. 1986, 90p. 95d, I. Turiel, (LBL) UC95d

BIOLOGY AND MEDICINE

Journal Submissions

LBL-22251 (B) Cell-Cycle-Dependent X-ray OER: Role of Endogenous Glutathione, Sept. 1986, 36p. Submitted to *Radiat. Res.*, E. Blakely, R. Roots, P. Chang, L. Lommel, L. Craise, E. Goodwin, and E. Yee, (LBL) W. Blakely and D. Dodgen, (Bethesda, MD) UC48

LBL-22323 Preprint (B) Global Thermodynamic Potential Function for Nonequilibrium, Open Chemical Reaction Systems, Oct. 1986, 103p. To be submitted for publication, H.C. Mel and P.S. Geissler, (LBL) UC4

LBL-22351 Preprint (B) Erythropoietin and Anemia in Chronic Renal Failure, Oct. 1986, 18p. Submitted to *Exp. Hematol.*, V. Pavlovic-Kentera, L. Djukanovic, and L. Biljanovic-Paunovic, (Beograd, Yugoslavia) G.K. Clemons, (LBL) UC48

LBL-22381 (B) Expression of Multiple Epitopes on High Molecular Weight Glycoproteins (PAS-O Like Molecules) on Human Mammary Carcinoma Cells (734B) and Milk Fat Globule Membranes, Oct. 1986, 47p. Submitted to *J. Immunol.*, G. Parry, L. Moss, B. Cullen, N. Dinh, D. Greenwalt, and R. Ranken, (LBL) UC48

LBL-22405 (B) Survival of Rabbit Platelets Labeled with $^{67}\text{Gallium}$, Oct. 1986, 23p. Submitted to *J. Nucl. Med.*, E. Mazoyer, D. Carpenter, Y. Yano, K. Dalal, M. Singh, and B. Mazoyer, (LBL) S. Ebbe, (LBL and UCSF) UC48

LBL-22452 (B) First Position Wobble in Codon-Anticodon Pairing: Amber Suppression by a Yeast Glutamine tRNA, Oct. 1986, 18p. Submitted to *Gene*, J.P. Lin, M. Aker, K.C. Sitney, and R.K. Mortimer, (LBL and UCB) UC48

- LBL-22453 (B) Differential Repair of DNA Damage in Specific Nucleotide Sequences in Monkey Cells, Oct. 1986, 24p. Submitted to *Nucleic Acids Res.*, S.A. Leadon, (LBL and Stanford Univ.) UC48
- LBL-22458 (B) Sequential Exposures of Mammalian Cells to Low- and High-LET Radiations. II. As a Function of Cell-Cycle Stages, Oct. 1986, 26p. Submitted to *Radiat. Res.*, F.Q.H. Ngo, E.A. Blakely, C.A. Tobias, P.Y. Chang, and L. Lommel, (LBL) UC48
- LBL-22484 (B) Lipolysis Products Promote the Formation of Complexes of Very Low Density and Low Density Lipoproteins, Nov. 1986, 44p. Submitted to *Biochim. Biophys. Acta*, T.A. Musliner, (LBL and Oakland, CA) K.M. McVicker and J.F. Iosefa, (Oakland, CA) R.M. Krauss, (LBL) UC48
- LBL-22512 (B) Quantitative Immunocytochemical Assay for Infectious Retroviruses, Nov. 1986, 13p. Submitted to *J. Virol.*, A.W. Stoker and M.J. Bissell, (LBL and UCB) UC48
- LBL-22514 (B) Influence of a Reconstituted Basement Membrane and Its Components on Casein Gene Expression and Secretion in Mouse Mammary Epithelial Cells, Nov. 1986, 29p. Submitted to *Proc. Natl. Acad. Sci.*, M.L. Li, D.A. Farson, C. Hatier, and M.J. Bissell, (LBL) J. Aggeler, (U.C. Davis) J. Hassell, (Bethesda, MD) UC48
- LBL-22517 (B) Some Endocrine Aspects of Renal and Extrarenal Erythropoietin in Normoxic and Hypoxic Rats, Nov. 1986, 14p. Submitted to *NATO Adv. Study Inst.*, G.K. Clemons, (LBL) UC48
- LBL-22532 (B) Transferrin is a Major Mouse Milk Protein and Is Synthesized by Mammary Epithelial Cells, Nov. 1986, 22p. Submitted to *In Vitro*, E.Y.-I. Lee, M.H. Barcellos-Hoff, L.-H. Chen, G. Parry, and M.J. Bissell, (LBL) UC48

CENTER FOR ADVANCED MATERIALS

Journal Submissions

- LBL-22110 Preprint (L) The Effect of Uniaxial Stress on Iron-Boron and Iron-Aluminum Defects in Silicon, Oct. 1986, 36p. Submitted to *Phys. Rev.*, D.D. Nolte, E.E. Haller, and L.M. Falicov, (LBL and UCB) P. Omling, (Univ. Lund, Sweden) UC25
- LBL-22370 Preprint (L) Resonant Raman Study of Intrinsic Defect Modes in Electron and Neutron Irradiated GaAs, Oct. 1986, 50p. Submitted to *Phys. Rev. B*, R.S. Berg, (Wellesley College, MA) P.Y. Yu, (LBL and UCB) UC25
- LBL-22516 (L) Reversal of Substrate Charge Specificity by Site-Directed Mutagenesis of Aspartate Aminotransferase, Nov. 1986, 10p. Submitted to *J. Am. Chem. Soc.*, C.N. Cronin and J.F. Kirsch, (LBL and UCB) B.A. Malcolm, (UCB) UC48

Abstracts

- LBL-22462 Abs. (L) A Survey of Recent Developments in the Numerical Simulation of Viscoelastic Flows, Oct. 1986, 1p. Invited talk to be presented at the Third Annual Meeting of the Polymer Processing Society, Stuttgart, West Germany, April 7-10, 1987 R. Keunings, (LBL) UC38

LBL-22463 Abs. (L) Use of the Finite Element Method to Interpret Viscous and Viscoelastic Effects in Blade Coating, Oct. 1986, 1p. To be presented at the Third Annual Meeting of the Polymer Processing Society, Stuttgart, West Germany, April 7-10, 1987 T. Sullivan, (Murray Hill, NJ) S. Middleman, (UCSD) R. Keunings, (LBL) UC38

CHEMICAL BIODYNAMICS

Journal Submissions

LBL-22424 (D) Assignment of the $g = 4.1$ EPR Signal to Manganese in the S2 State of the Photosynthetic Oxygen-Evolving Complex: An X-ray Absorption Edge Spectroscopy Study, Oct. 1986, 9p. Submitted to *Biochim. Biophys. Acta*, J. Cole, R.D. Guiles, A.E. McDermott, R.D. Britt, S.L. Dexheimer, and K. Sauer, (LBL and UCB) V.K. Yachandra and M.P. Klein, (LBL) UC48

Other Reports

LBL-22356 Report (D) Chemical Biodynamics Division Annual Report: October 1, 1985-September 30, 1986, Oct. 1986, 64p. UC13

EARTH SCIENCES

Journal Submissions

LBL-22398 (W) Density of Molten Sodium Aluminosilicates, Feb. 1985, 4p. Submitted to *J. Am. Ceram. Soc.*, **69**, no. 5, May 1986, D.J. Stein, J.F. Stebbins, and I.S.E. Carmichael, (LBL) UC11

LBL-22494 (W) Aperture Correlation of a Fractal Fracture, Sept. 1986, 24p. Submitted to *J. Geophys. Res.*, J.S.Y. Wang and T.N. Narasimhan, (LBL) C.H. Scholz, (Columbia Univ.) UC11

Abstracts

LBL-22461 Abs. (W) Reservoir Studies of the Seljarnarnes, Iceland Geothermal Field, Oct. 1986, 2p. To be presented at the Stanford Geothermal Program Twelfth Annual Workshop on Geothermal Reservoir Engineering, Stanford, CA, January 20-21, 1987, H. Tulinus, A.L. Spencer, H. Kristmannsdottir, and T. Thorsteinsson, (Reykjavik, Iceland) G.S. Bodvarsson, (LBL) UC66a

ENGINEERING

Conference Reports/Books

LBL-21575 Report (E) Fast Signal Calibration Systems for Large Detector System Front Ends, Oct. 1986, 5p. Presented at the IEEE Nuclear Science Symposium, Washington, DC, October 29-31, 1986; and to be published in *IEEE Trans. Nucl. Sci.*, C.C. Lo, F.A. Kirsten, and M. Nakamura, (LBL) UC38

LBL-22342 Report (E) Control of the Fields Due to Superconductor Magnetization in the SSC Magnets, Sept. 1986, 5p. Presented at the 1986 Applied Superconductivity Conference, Baltimore, MD, September 29-October 3, 1986; and to be published in *IEEE Trans. Magn.* 23, M.A. Green, (LBL) UC28

LBL-22343 Report (E) ASTROMAG: A Superconducting Particle Astrophysics Magnet Facility for the Space Station, Sept. 1986, 5p. Presented at the 1986 Applied Superconductivity Conference, Baltimore, MD, September 29-October 3, 1986; and to be published in *IEEE Trans. Mag.* 23, M.A. Green and G.F. Smoot, (LBL) R.L. Golden, (New Mexico St. Univ.) M.H. Israel, (Washington Univ.) R. Kephart and R. Neimann, (FNL) R.A. Mewalt, (Calif. Inst. Technol.) J.F. Ormes, (Greenbelt, MD) P. Spillantini, (Firenze, Italy) M.E. Widenbeck, (Univ. Chicago) UC34B

Other Reports

LBL-21930 Report (E) Fast Dual Scale-down Module (LBL#21X7981P-1), Aug. 1986, 7p. 38, R.J. McDonald, D.A. Landis, and G.J. Wozniak, (LBL) UC38

MATERIALS AND MOLECULAR RESEARCH

Journal Submissions

LBL-20359 Preprint (I) Alcohol Synthesis from CO and H₂ over Molybdenum Sulfide. The Effects of Pressure and Promotion by Potassium Carbonate, July 1986, 21p. Submitted to *Appl. Catal.*, X. Youchang, B.M. Naasz, and G.A. Somorjai, (LBL and UCB) UC4

LBL-20855 (H) Boron-Carbon-Nitrogen Materials of Graphite-like Structure, Aug. 1986, 6p. Submitted to *Mater. Res. Bull.*, R.B. Kaner, J. Kouvetakis, M.L. Sattler, and N. Bartlett, (LBL and UCB) C.E. Warble, (Victoria, Australia) UC4

LBL-21511 Preprint (H) LEED Theory for Incommensurate Overlayers: Application to Graphite on Pt(111), June 1986, 55p. Submitted to *Surf. Sci.*, Z. Hu, D.F. Ogletree, M.A. Van Hove, and G.A. Somorjai, (LBL and UCB) UC4

LBL-21587 (I) Structural Transformations in the Decomposition of Mg(OH)₂ and MgCO₃, June 1986, 34p. Submitted to *J. Am. Ceram. Soc.*, M.G. Kim, U. Dahmen, and A.W. Searcy, (LBL and UCB) UC25

LBL-21714 (N) Specific Sequestering Agents for the Actinides. 13. Synthesis and Initial Biological Testing of Polydentate Hydroxypyridinonate Ligands, June 1986, 42p. Submitted to *J. Med. Chem.*, D.L. White, P.W. Durbin, N. Jeung, and K.N. Raymond, (LBL and UCB) UC4

LBL-21776 (I) Theory for Sintering in Temperature Gradients: The Role of Long Range Mass Transport, Nov. 1986, 12p. Submitted to *J. Am. Ceram. Soc.*, A.W. Searcy, (LBL and UCB) UC25

LBL-22042 Preprint (H) Electron Energy Loss and Thermal Desorption Spectroscopy of Pyridine Adsorbed on Pt(111), Feb. 1986, 38p. To be published in *J. Phys. Chem.*, V.H. Grassian and E.L. Muetterties, (LBL and UCB) UC25

- LBL-22159 (I) Shape and Size of Crystalline MgO Particles Formed by the Decomposition of Mg(OH)_2 , Nov. 1986, 9p. Submitted to *J. Am. Ceram. Soc.*, M.G. Kim, U. Dahmen, and A.W. Searcy, (LBL and UCB) UC25
- LBL-22161 (I) Thermodynamics of Two, Two-Dimensional Phases Formed by CO_2 Chemisorption on MgO, Nov. 1986, 21p. Submitted for *J. Phys. Chem.*, D. Beruto, (LBL, UCB, and Univ. Genova) R. Botter, (Univ. Genova) A.W. Searcy, (LBL and UCB) UC25
- LBL-22199 (H) The Infrared Spectrum of the Hydrogen Bifluoride Anion: Unprecedented Variation with Level of Theory, Aug. 1986, 14p. Submitted to *Chem. Phys. Lett.*, C.L. Janssen, W.D. Allen, and H.F. Schaefer III, (LBL and UCB) J.M. Bowman, (Chicago, IL) UC4
- LBL-22305 Preprint (I) Atomic Site and Species Determinations Using Channelling and Related Effects in Analytical Electron Microscopy, Oct. 1986, 53p. Submitted to *Ultramicroscopy*, K.M. Krishnan, (LBL) UC37
- LBL-22310 Preprint (N) Multinuclear NMR Spectroscopy of the Tetrahedral U(IV) Complex: $\text{U(BH}_3\text{CH}_3)_4$, Oct. 1986, 33p. Submitted to *J. Am. Chem. Soc.*, E. Gamp, R. Shinomoto, and N. Edelstein, (LBL and UCB) B.R. McGarvey, (Univ. Windsor, Canada) UC4
- LBL-22402 Preprint (H) Correlation of Vapor-Liquid Equilibria for the System Ammonia-Carbon Dioxide-Water, Oct. 1986, 17p. Submitted to *AIChE*, K. Kawazuishi and J.M. Prausnitz, (LBL and UCB) UC38
- LBL-22428 (H) Radiative Decay Lifetimes of CH_2 , Oct. 1986, 42p. Submitted to *J. Chem. Phys.*, M. Okumura, L.I. Yeh, D. Normand, J.J.H. Van Den Biesen, S.W. Bustamente, Y.T. Lee, T.J. Lee, N.C. Handy, and H.F. Schaefer III, (LBL and UCB) UC4
- LBL-22429 (H) Cyclopolysilanes: Structure, Strain, and Radical-Anion Aromaticity, Oct. 1986, 44p. Submitted to *J. Am. Chem. Soc.*, R.S. Grev and H.F. Schaefer III, (LBL and UCB) UC4
- LBL-22430 (H) The Infrared Spectrum of the Acetylene Radical Cation C_2H_2^+ . A Theoretical Study Using SCF, MCSCF, and CI Methods, Oct. 1986, 7p. Submitted to *J. Chem. Phys.*, T.J. Lee, J.E. Rice, and H.F. Schaefer III, (LBL and UCB) UC4
- LBL-22454 (H) The H_5^+ Potential Energy Hypersurface. Characterization of Ten Distinct Energetically Low-Lying Stationary Points, Oct. 1986, 30p. Submitted to *J. Chem. Phys.*, Y. Yamaguchi, J.F. Gaw, R.B. Remington, and H.F. Schaefer III, (LBL and UCB) UC4
- LBL-22456 (N) The Structure and Properties of Tetrakis(tironato)cerate(IV), $\text{Na}_{12}[\text{Ce}(\text{C}_6\text{H}_2\text{O}_2(\text{SO}_3)_2)_4] \cdot 9 \text{H}_2\text{O} \cdot 6 \text{C}_3\text{H}_7\text{NO}$, June 1985, 25p. Submitted to *Inorg. Chim. Acta*, S.F. Haddad and K.N. Raymond, (LBL and UCB) UC4
- LBL-22468 (I) Reaction of Water and Oxygen with Liquid Uranium, Nov. 1986, 29p. Submitted to *Oxid. Met.*, M. Balooch and D.R. Olander (LBL) W.J. Siekhaus, (LLNL) UC10
- LBL-22495 (H) Some Problems in the Oxidative Addition and Binding of an Ethylene to a Transition Metal Center, Jan. 1986, 52p. Submitted to *Organometallics*, J. Silvestre, M.J. Calhorda, and R. Hoffmann, (Cornell Univ.) R.G. Bergman and P.O. Stoutland, (LBL and UCB) UC4

LBL-22500 (H) The Electrical Conductivity, Viscosity, and Density of a Two-Component Ionic System at its Critical Point, Nov. 1986, 29p. Submitted to *J. Phys. Chem.*, D.R. Schreiber, M.C.P. De Lima, and K.S. Pitzer, (LBL and UCB) UC34A

LBL-22505 (H) Theoretical Studies of Diphosphene and Diphosphinylidene in Their Closed Shell States, Low-Lying Open-Shell Singlet and Triplet States, and Transition States. Search for a Stable Bridged Structure, Oct. 1986, 58p. Submitted to *J. Am. Chem. Soc.*, T.L. Allen, (U.C. Davis) A.C. Scheiner, Y. Yamaguchi, and H.F. Schaefer III, (LBL and UCB) UC4

Conference Reports/Books

LBL-21788 Report (I) Specific Heat of Heavy Fermion Superconductors under Pressure, May 1986, 4p. Presented at the 2nd Workshop on Actinides under Pressure, Karlsruhe, West Germany, June 2-3, 1986; and to be published in *Physica B*, J.A. Olsen, R.A. Fisher, and N.E. Phillips, (LBL and UCB) G.R. Stewart, (Univ. Florida) A.L. Giorgi, (LANL) UC38

LBL-22239 Report (I) Magnetic and Electronic Properties of Transition-Metal Surfaces and Overlayers, Jan. 1986, 13p. Presented at the Magnetic Properties of Low-Dimensional Systems, Taxco, Mexico, January 6-9, 1986; and published in the Proceedings, L.M. Falicov and J.L. Moran-Lopez, Eds., Springer-Verlag, New York, NY, 1986, R.H. Victora, (LBL and UCB) UC25

LBL-22316 Report (I) Lectures on Pulsed NMR, Sept. 1986, 159p. Presented at the 100th Fermi School of Physics, Varenna, Italy, July 8-18, 1986; and to be published in the Proceedings, A. Pines, (LBL and UCB) UC4

LBL-22368 Report (I) Grain Boundaries and Interfaces: Some Applications of Electron Microscopy and Microanalysis, Sept. 1986, 27p. Presented at the Ceramic Microstructures '86: Role of Interfaces Conference, Berkeley, CA, July 28-31, 1986, G. Thomas, (LBL and UCB) UC37

LBL-22444 Report (I) The Temperature Dependence of the Specific Heat and Entropy of CeAl_3 , Oct. 1986, 13p. To be presented at the Conference on Magnetism and Magnetic Materials, Baltimore, MD, November 17-20, 1986; and to be published in *J. Appl. Phys.*, A.S. Edelstein, (Washington, DC) R.A. Fisher and N.E. Phillips, (LBL) UC34A

LBL-22479 Report (I) New Developments in High-Strength and High Ductility Reinforcing Bars and Prestressing Tendons, Feb. 1986, 5p. Presented at the Tenth International Congress of the FIP, New Delhi, India, February 16-20, 1986, T.Y. Lin and P.Y. Chow, (USA) G. Thomas, (LBL and UCB) R.H.G. Rau, (India) UC25

Other Reports

LBL-20660 Report (O) Study of the Impedance Behavior of Surface Layers Formed on Lithium Electrodes in a Propylene Carbonate Electrolyte, Jan. 1986, 140p. 25, J.G. Thevenin and R.H. Muller, (LBL) UC25

LBL-22249 Report (H) Hydrocarbon Interactions with Ir, Ni, Si, and NiSi_2 Surfaces, Oct. 1986, 154p. Ph.D., D.G. Klarup, (LBL and UCB) UC4

Abstracts

- LBL-21676 Abs. (H) Molecular Properties by Quantum Monte Carlo, Mar. 1986, 1p. Presented at the Eighth Annual West Coast Theoretical Chemistry Conference, Santa Barbara, CA, March 26-28, 1986, R.N. Barnett and W.A. Lester, Jr., (LBL and UCB) P.J. Reynolds, (LBL) UC4
- LBL-21677 Abs. (H) Polyatomic Photodissociation as a Quantum Transition: Photofragment Vibrational Distributions of $C_2N_2(\tilde{C}^1\Pi_u)$ Predissociation, Mar. 1986, 1p. Presented at the Eighth Annual West Coast Theoretical Chemistry Conference, Santa Barbara, CA, March 26-28, 1986; and the 17th Annual Meeting of the Division of Electron and Atomic Physics, American Physical Society, Eugene, OR, June 18-20, 1986, C.E. Dateo and W.A. Lester, Jr., (LBL and UCB) V.Z. Kresin, (LBL) M. Dupuis, (Kingston, NY) UC4
- LBL-21678 Abs. (H) Coupled-Channel Study of Rovibrational Excitation of an Electronically Excited Diatomic Molecule by Atom Impact: $He(^1S) + H_2(B^1\Sigma_u^+)$, Mar. 1986, 1p. Presented at the Eighth Annual West Coast Theoretical Chemistry Conference, Santa Barbara, CA, March 26-28, 1986; and the 17th Annual Meeting of the Division of Electron and Atomic Physics, American Physical Society, June 18-20, 1986, R.M. Grimes, W.A. Lester, Jr., and M. Dupuis, (LBL and UCB) UC4
- LBL-21679 Abs. (H) Analytic Energy Derivatives by Quantum Monte Carlo, Mar. 1986, 1p. Presented at the Eighth Annual West Coast Theoretical Chemistry Conference, Santa Barbara, CA, March 26-28, 1986, B.L. Hammond and W.A. Lester, Jr., (LBL and UCB) P.J. Reynolds, (LBL) UC4
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- LBL-22016 Abs. (H) Quantum Monte Carlo: Statistical Mechanics Treatment of Molecules, Aug. 1986, 1p. Presented at the STATPHYS-16, Boston, MA, August 10-16, 1986, P.J. Reynolds, (LBL) UC4

NUCLEAR SCIENCE

Journal Submissions

LBL-22287 Preprint (S) Finite Temperature Metastable Matter, Oct. 1986, 14p. Submitted to *Phys. Lett. B*, N.K. Glendenning, (LBL) UC34C

LBL-22378 Preprint (S) The Quantum Statistical Model of Fragment Formation: Entropy and Temperature Extraction in Heavy Ion Collisions, Oct. 1986, 98p. Submitted to *Nucl. Phys. A*, D. Hahn and H. Stöcker, (LBL) UC34C

Conference Reports/Books

LBL-21765 Report (S) Dependence of Heavy-Ion Neutron Transfer on Distance and Spin, June 1986, 14p. Presented at the International Conference on Nuclear Structure, Reactions, and Symmetries, Dubrovnik, Yugoslavia, June 5-14, 1986, J.O. Rasmussen, M.A. Stoyer, (LBL) M.W. Guidry, (Univ. Tennessee and ORNL) L.F. Canto and R. Donangelo, (Rio de Janeiro Fed. Univ., Brazil) UC34C

LBL-22406 Report (S) On-Line Isotope Separation of Projectile Fragments Produced in Relativistic Heavy-Ion Reactions, Sept. 1986, 7p. Presented at the 7th International Conference on Hyperfine Interactions, Bangalore, India, September 8-12, 1986, Y. Nojiri, K. Matsuta, T. Minamisono, K. Sugimoto, and K. Takeyama, (Osaka Univ., Japan) H. Hamagaki, S. Nagamiya, K. Omata, and Y. Shida, (Univ. Tokyo, Japan) I. Tanihata, (Wako, Japan) T. Kobayashi, (Ibaraki, Japan) S. Matsuki and S. Shimoura, (Kyoto Univ., Japan) J.R. Alonso, G. Krebs, and T.J.M. Symons, (LBL) UC34C

Other Reports

LBL-21929 Report (S) Quad Delay Gate Generator (LBL #21x6691 P-2), Aug. 1986, 13p. 38, R.J. McDonald, M.R. Maier, D.A. Landis, and G.J. Wozniak, (LBL) UC38

PHYSICS

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LBL-20131 Preprint (F) Geomagnetic Reversals from Impacts on the Earth, Oct. 1986, 15p. Submitted to *Geophys. Res. Lett.*, R.A. Muller and D.E. Morris, (LBL) UC11

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Conference Reports/Books

LBL-22107 Report (F) Are Faster-Than-Light Influences Necessary?, July 1986, 27p. To be published as a chapter in **Quantum Mechanics versus Local Realism: The Einstein, Podolsky and Rosen Paradox**, F. Selleri, Ed., Plenum Press, New York, NY, H.P. Stapp, (LBL) UC34D

LBL-22248 Report (F) Quantum Theory and the Physicists' Conception of Nature: Philosophical Implications of Bell's Theorem, Oct. 1986, 28p. Invited talk presented at the Conference, "The World View of Contemporary Physics: Is There a Need for a New Metaphysics?", Fort Collins, CO, September 25-28, 1986; and to be published in the *Int. J. Theor. Phys.*, H.P. Stapp, (LBL) UC34D

LBL-22277 Report (F) String Theory and Holomorphic Line Bundles, Sept. 1986, 6p. Presented at the 7th Workshop on Grand Unification, Toyama, Japan, April 16-18, 1986, O. Alvarez, (LBL) UC34D

LBL-22388 Report (F) Equilibrium Fluid Interfaces in the Absence of Gravity, Oct. 1986, 31p. To be presented at the ASME Microgravity Fluid Mechanics Symposium, Anaheim, CA, December 11-18, 1986 P. Concus, (LBL and UCB) UC38

LBL-22392 Report (F) The Hydrogen Bubble Chamber and the Strange Resonances, June 1985, 11p. Presented at the Conference on the History of Particle Physics, Fermilab, Batavia, IL, June 1985, L.W. Alvarez, (LBL) UC34D

Other Reports

LBL-21916 Report (F) Accelerating the Loop Expansion, July 1986, 102p. Ph.D., R. Ingermanson, (LBL and UCB) UC34D

LBL-22303 Report (F) Continuum Regularization of Quantum Field Theory, Apr. 1986, 78p. Ph.D., Z. Bern, (LBL and UCB) UC34D

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