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**LAWRENCE BERKELEY LABORATORY
UNIVERSITY OF CALIFORNIA**

Berkeley, California

Technical Information Department

**RECENT PAPERS SUBMITTED AND
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SEPTEMBER 1986

ACCELERATOR AND FUSION RESEARCH

Journal Submissions

- LBL-21003 Preprint (K) II. The Characterization of Multilayer X-ray Analyzers — Models and Measurements, Aug. 1986, 27p. Submitted to *Opt. Eng.*, B.L. Henke, J.Y. Uejio, H.T. Yamada, and R.E. Tackaberry, (LBL) UC34A
- LBL-21160 Rev. Preprint (K) Use of Optimal Estimation Theory, in Particular the Kalman Filter, in Data Analysis and Signal Processing, Aug. 1986, 31p. Submitted to *Rev. Sci. Instrum.*, W.S. Cooper, (LBL) UC32
- LBL-21443 Preprint (K) Free-Electron Lasers, Apr. 1986, 42p. Submitted to *Am. Sci.*, A.M. Sessler and D. Vaughan, (LBL) UC34A

Conference Reports/Books

- LBL-20876 Report (K) The SuperHILAC Upgrade Project, June 1986, 11p. Presented at the 1986 Linear Accelerator Conference, Stanford, CA, June 2-6, 1986, B. Feinberg and I.G. Brown, (LBL) UC34A
- LBL-20910 Report (K) The MEVVA Ion Source for High Current Metal Ion Implantation, July 1986, 16p. Presented at the 6th International Conference on Ion Implantation Technology, Berkeley, CA, July 28-August 1, 1986, I. Brown and J. Washburn, (LBL) UC34A
- LBL-21194 Report (K) Preliminary Design of a ≈ 10 MV Ion Accelerator for HIF Research, June 1986, 10p. Presented at the Second International Topical Symposium on ICF Research by Particle Beams, Nagaoka, Japan, June 16-18, 1986, T.J. Fessenden, C.M. Celata, A. Faltens, T. Henderson, D.L. Judd, D. Keefe, L.J. Laslett, J. Meneghetti, C. Pike, and D. Vanecek, (LBL) UC28
- LBL-21387 Report (K) Simulation of Synchrotron Motion with RF Noise, Aug. 1986, 7p. Presented at the 13th International Conference on High Energy Accelerators, Novosibirsk, USSR, August 7-11, 1986, B.T. Leemann, E. Forest, and S. Chattopadhyay, (LBL) UC28

- LBL-21389 Report (K) Impedance of a Beam Tube with Antechamber, Aug. 1896, 5p. Presented at the 13th International Conference on High Energy Accelerators, Novosibirsk, USSR, August 7-11, 1986, W. Barry, G.R. Lambertson, and F. Voelker, (LBL) UC34A
- LBL-21390 Report (K) Conceptual Design of a 1-2 GeV Synchrotron Radiation Source, Aug. 1986, 6p. Presented at the 13th International Conference on High Energy Accelerators, Novosibirsk, USSR, August 7-11, 1986, UC28
- LBL-21391 Report (K) Effects of Wigglers and Undulators on Beam Dynamics, Aug. 1986, 4p. Presented at the 13th International Conference on High Energy Accelerators, Novosibirsk, USSR, August 7-11, 1986, L. Smith, (LBL) UC28
- LBL-21527 Report (K) Advanced Concepts for Acceleration, July 1986, 19p. Presented at the High-Brightness Accelerators Conference, Pitlochry, Scotland, July 13-25, 1986, D. Keefe, (LBL) UC28
- LBL-21528 Report (K) Induction Linacs July 1986, 14p. Presented at the High-Brightness Accelerators Conference, Pitlochry, Scotland, July 13-25, 1986, D. Keefe, (LBL) UC28
- LBL-21744 Report (K) MBE-4: An Induction Linac Experiment for Heavy Ion Fusion, June 1986, 5p. Presented at the Sixth International Topical Conference on High-Power Electron and Ion-Beam Research and Technology, Kobe, Japan, June 9-12, 1986, T.J. Fessenden, R.T. Avery, D.A. Brodzik, C.S. Chavis, A. Faltens, D.E. Gough, T.F. Henderson, D.L. Judd, D. Keefe, C. Kim, L.J. Laslett, J.R. Meneghetti, C.D. Pike, L. Smith, D.L. Vanecek, and A.I. Warwick, (LBL) UC28
- LBL-21745 Report (K) Highlights of the Heavy Ion Fusion Symposium, July 1986, 5p. Presented at the LINAC '86 Conference, Stanford, CA, June 2-6, 1986, D. Keefe, (LBL) UC21
- LBL-21760 Report (K) Parameter Studies of Candidate Lattices for the 1-2 GeV Synchrotron Radiation Source, Jan. 1986, 36p. Presented at the Institute of Nuclear Physics Workshop, Frascati, Italy, April 6-11, 1986, M.S. Zisman, (LBL) UC28
- LBL-21826 Report (K) A Comparison of the Design and Costs of Induction Linac Drivers for Inertial Fusion Using Ions of Mass 133 and 200, June 1986, 4p. Presented at the Seventh Topical Meeting on the Technology of Fusion Energy, Reno, NV, June 15-19, 1986; and to be published in *Fusion Technol.*, November 1986, J. Hovingh, (LLNL) V.O. Brady, A. Faltens, and E.P. Lee, (LBL) UC28
- LBL-21917 Report (K) Generation of Oxygen, Carbon and Metallic Ion Beams by a Compact Microwave Source, July 1986, 10p. Presented at the Ion Implantation Technology Conference, Berkeley, CA, July 28-August 1, 1986, S.R. Walther, K.N. Leung, K.W. Ehlers, and W.B. Kunkel, (LBL) UC34A
- LBL-21946 Report (K) Design and Characterization for Absolute X-ray Spectrometry in the 100-10 000 eV Region, Aug. 1986, 28p. Presented at the 11th International Congress on X-ray Optics and Microanalysis, London, Ontario, August 4, 1986, B.L. Henke, (LBL) UC34A

APPLIED SCIENCE

Journal Submissions

- LBL-18523 (J) The Effect of Variations in Convection Coefficients on Thermal Energy Storage in Buildings. Part I-Interior Partition Walls, Feb. 1986, 32p. Submitted to *Energy Build.*, H. Akbari, D. Samano, A. Mertol, F. Bauman, and R. Kammerud, (LBL) UC59B
- LBL-18562 Preprint (J) Impacts of Ventilation Strategies on Energy Consumption and Indoor Air Quality in Single-Family Residences, June 1986, 25p. To be published in *Energy Build.*, D. Hekmat, H.E. Feustel, and M.P. Modera, (LBL) UC95c
- LBL-20249 (J) Voltammetry of Sodium Polysulfides at Metal Electrodes, Nov. 1985, 8p. Submitted to *J. Electrochem. Soc.*, J.C. Dobson, F.R. McLarnon, and E.J. Cairns, (LBL and UCB) UC94cc
- LBL-21514 Preprint (J) Assessment of Residential Exhaust-Air Heat Pump Applications in the United States, June 1986, 32p. Submitted to *Energy-Int. J.*, P.H. Wallman, B.S. Pedersen, R.J. Mowris, W.J. Fisk, and D.T. Grimsrud, (LBL) UC95d

Conference Reports/Books

- LBL-21741 Report (J) Financial Impacts of Energy Conservation Investment in Public Housing, July 1986, 16p. Presented at the ACEEE 1986 Summer Study on Energy Efficiency in Buildings, Santa Cruz, CA, August 17-23, 1986, E. Mills, R.L. Ritschard, and C.A. Goldman, (LBL) UC95d

Other Reports

- LBL-20201 Report (J) FY 1985 Annual Report: Chemical Process Research and Development Program, Aug. 1986, 60p. 13, UC13
- LBL-20202 Report (J) FY 1985 Annual Report: Solar Energy Program, Aug. 1986, 41p. 13, UC13
- LBL-20204 Report (J) FY 1985 Annual Report: Environmental Research Program, Aug. 1986, 123p. 13, UC13

Abstracts

- LBL-22130 Abs. (J) Black Carbon Aerosol Measurements During AGASP-II, Sept. 1986, 1p. To be presented at the 1986 Fall Meeting, American Geophysical Union, San Francisco, CA, December 8-12, 1986, A.D.A. Hansen and T. Novakov, (LBL) UC59A
- LBL-22131 Abs. (J) Black Carbon Aerosol Measurements During WATOX-86, Sept. 1986, 1p. To be presented at the 1986 Fall Meeting, American Geophysical Union, San Francisco, CA, December 8-12, 1986, A.D.A. Hansen and T. Novakov, (LBL) UC59A
- LBL-22132 Abs. (J) Ground-Level Measurements of Aerosol Black Carbon at GMCC-Barrow, Alaska, During the AGASP-II Program, Sept. 1986, 1p. To be presented at the 1986 Fall Meeting, American Geophysical Union, San Francisco, CA, December 8-12, 1986, A.D.A. Hansen and T. Novakov, (LBL) B.A. Bodhaine, (Boulder, CO) UC59A

BIOLOGY AND MEDICINE

Journal Submissions

- LBL-21782 (B) Comparative Evaluation of Aromatic Iododemetallation Techniques for Labeling Radiopharmaceuticals with Iodine-122, June 1986, 24p. Submitted to *Int. J. Appl. Radiat. Isot.*, S.M. Moerlein, C.A. Mathis, and Y. Yano, (LBL and UCB) UC48
- LBL-21783 (B) Use of Aryltrimethylgermanium Substrates for Facile Aromatic Chlorination, Bromination, and Iodination, June 1986, 18p. Submitted to *J. Org. Chem.*, S.M. Moerlein, (LBL and UCB) UC48
- LBL-21810 Preprint (B) Essentials of a Rubidium-82 Generator for Nuclear Medicine, June 1986, 21p. Submitted to *Int. J. Appl. Radiat. Isot.*, Y. Yano, (LBL and UCB) UC48
- LBL-21978 (B) Immunoreactive Erythropoietin Concentrations in Fetal and Neonatal Rats and the Effects of Hypoxia, Aug. 1986, 23p. Submitted to *Blood*, G.K. Clemons, S.L. Fitzsimmons, and D. DeManincor, (LBL) UC48
- LBL-22039 (B) Electrophoretic Karyotyping of Laboratory and Commercial Strains of *Saccharomyces* and other Yeasts, June 1986, 15p. Submitted to *Int. J. Syst. Bacteriol.*, J.R. Johnston and R.K. Mortimer, (LBL and UCB) UC48
- LBL-22055 (B) Methodological Factors Affecting PET Measurements of Cerebral Glucose Metabolism, Feb. 1986, 15p. Submitted to *J. Nucl. Med.*, W.J. Jagust, R.P. Friedland, (UCB, UCD, and Martinez, CA) T.F. Budinger, R.H. Huesman, B.M. Mazoyer, and B.L. Knittel, (LBL and UCB) UC48
- LBL-22062 (B) Electron Diffraction Analysis of the M_{412} Intermediate of Bacteriorhodopsin, Aug. 1986, 26p. Submitted to *Biophys. J.*, R.M. Glaeser, (LBL and UCB) J. Baldwin, T.A. Ceska, and R. Henderson, (Cambridge, UK) UC48
- LBL-22146 (B) Coordinate Changes in Levels of Human Serum Low and High Density Lipoprotein Subclasses in Healthy Men, Sept. 1986, 30p. Submitted to *Arteriosclerosis*, R.M. Krauss, (LBL, UCB, and UCSF) P.T. Williams and P.D. Wood, (Stanford Univ.) F.T. Lindgren, (LBL and UCB) UC48
- LBL-22147 Report (B) Metabolism of Intermediate and Very Low Density Lipoprotein Subfractions from Normal and Dysbetalipoproteinemic Plasma: In Vivo Studies in the Rat, Sept. 1986, 42p. Submitted to *Arteriosclerosis*, T.A. Musliner, (LBL, UCB, and Oakland, CA) K.M. McVicker and J.F. Iosefa, (Oakland, CA) R.M. Krauss, (LBL and UCB) UC48

Conference Reports/Books

- LBL-21556 Report (B) Recent Developments in Positron Emission Tomography (PET) Instrumentation, Apr. 1986, 24p. Presented at the International Workshop on Physics and Engineering in Computerized Multidimensional Imaging and Processing, Irvine, CA, April 4, 1986; and to be published in *J. SPIE*, S.E. Derenzo and T.F. Budinger, (LBL and UCB) UC48

- LBL-22052 Report (B) Safety of NMR In Vivo Imaging and Spectroscopy, July 1986, 12p. Presented at the Clinical Magnetic Resonance — 1986, Conference on Imaging, Spectroscopy, Instrumentation Economics, San Francisco, CA, September 8–12, 1986, T.F. Budinger, (LBL, UCB and UCSF) UC48
- LBL-22053 Report (B) Single-Photon Emission Computed Tomography: Physics, Potentials and Limitations, June 1986, 59p. Presented at the Second International Symposium on Technetium in Chemistry and Nuclear Medicine, Padua, Italy, September 9–11, 1985, T.F. Budinger, (LBL and UCB) UC48
- LBL-22054 Report (B) Potential Hazards of NMR In Vivo Imaging and Spectroscopy, June 1986, 33p. Published in *New Concepts in Cardiac Imaging*, G. Pohost and L. Sugg, Eds., Year Book Medical Publishers, Inc., Chicago, IL, July 1985, T.F. Budinger, (LBL, UCB, and UCSF) UC48
- LBL-22056 Report (B) Advanced Model for Medical Imaging, Aug. 1986, 17p. Presented at the Conference on Scientific Applications and Algorithm Design for High Speed Computing, Urbana, IL, April 7–10, 1986, J.R. Baker and T.F. Budinger, (LBL and UCB) UC48
- LBL-22118 Report (B) Characterization of the New Neon Radiotherapy Beams at the Lawrence Berkeley Laboratory, Aug. 1986, 26p. Presented at the American Association of Physicists in Medicine Meeting, Lexington, KY, August 2, 1986, M. Collier, T. Renner, M. Kessler, S. Pitluck and S. Henderson, (LBL and UCB) UC48

CENTER FOR ADVANCED MATERIALS

Journal Submissions

- LBL-21591 (L) Dislocation Dynamics and the Response of Materials to Impact: A Brief Update, May 1986, 3p. Submitted to *Appl. Mech. Update*, J.J. Gilman, (LBL) UC25
- LBL-21940 (L) Study of Monolayer Polymerization Using Nonlinear Optics, July 1986, 15p. Submitted to *J. Chem. Phys.*, G. Berkovic, Th. Rasing, and Y.R. Shen, (LBL and UCB) UC25
- LBL-21988 (L) Direct Imaging of Au and Ag Clusters by Scanning Tunneling Microscopy, July 1986, 11p. Submitted to *Appl. Phys. Lett.*, D.W. Abraham, K. Sattler, E. Ganz, H.J. Mamin, R.E. Thomson, and J. Clarke, (LBL and UCB) UC25
- LBL-21993 (L) Contamination-Mediated Deformation of Graphite by the Scanning Tunneling Microscope, July 1986, 15p. Submitted to *Phys. Rev. B*, H.J. Mamin, E. Ganz, D.W. Abraham, R.E. Thomson, and J. Clarke, (LBL and UCB) UC25
- LBL-22066 Report (L) Microscopic Mechanism of GaAs Schottky Barrier Formation, Aug. 1986, 15p. Submitted to *Phys. Rev. Lett.*, W. Walukiewicz, (LBL) UC25

CHEMICAL BIODYNAMICS

Journal Submissions

- LBL-21907 Preprint (D) The Photochemical Reduction of Carbon Dioxide to Carbon Monoxide in Water Using a Ni(II)Tetra-azamacrocyclic Complex as Catalyst Aug. 1986, 23p. Submitted to *J. Chem. Soc., Dalton Trans.*, J.L. Grant, K. Goswami, L.O. Spreer, J.W. Otvos, and M. Calvin, (LBL and UCB) UC61G
- LBL-22059 (D) Photoinduced Intramolecular Electron Transfer in Peptide Bridged Molecules, Aug. 1986, 65p. Submitted to *J. Am. Chem. Soc.*, K.S. Schanze and K. Sauer, (LBL and UCB) UC48
- LBL-22129 (D) The Molecular Structure of the Nitrile Ylide Derived from 3-Phenyl-2H-azirine in a Nitrogen Matrix, Sept. 1986, 25p. Submitted to *J. Phys. Chem.*, E. Orton, S.T. Collins, and G.C. Pimentel, (LBL) UC4
- LBL-22187 (D) The State of Manganese in the Photosynthetic Apparatus Determined by X-ray Absorption Spectroscopy, June 1986, 9p. Submitted to *J. Phys.*, V.K. Yachandra, R.D. Guiles, A. McDermott, R.D. Britt, J. Cole, S.L. Dexheimer, K. Sauer, and M.P. Klein, (LBL) UC48

EARTH SCIENCES

Journal Submissions

- LBL-19800 (W) Groundwater Contamination from an Inactive Uranium Mill Tailings Pile. 2. Application of a Dynamic Mixing Model, May 1986, 63p. Submitted to *Water Resour. Res.*, T.N. Narasimhan, A.F. White, and T. Tokunaga, (LBL) UC11

Conference Reports/Books

- LBL-20479 Report (W) Effects of Silica Redistribution on Performance of High-Level Nuclear Waste Repositories in Saturated Geologic Formations, Nov. 1985, 40p. Presented at the International Symposium on Coupled Processes Affecting the Performance of a Nuclear Waste Repository, Berkeley, CA, September 18-20, 1986, A. Verma and K. Pruess, (LBL) UC70
- LBL-21961 Report (W) Theoretical Considerations of Solubility with Emphasis on Mixed Aqueous Electrolytes, Aug. 1986. 12p. Presented at the IUPAC 2nd International Symposium on Solubility Phenomena, Newark, NJ, August 11-15, 1986, K.S. Pitzer, (LBL and UCB) UC4
- LBL-22047 Report (W) Numerical Models for the Evaluation of Geothermal Systems, Aug. 1986, 25p. Presented at the International Meeting on Geothermics and Geothermal Energy, Guarujá, State of Sao Paulo, Brazil, August 10-14, 1986, G.S. Bodvarsson, K. Pruess, and M.J. Lippmann, (LBL) UC66a

Other Reports

- LBL-21439 Report (W) The Use of Geostatistics to Incorporate Spatial Variability in the Modeling of Flow Through Fracture Networks, June 1986, 92p. 11, J.C.S. Long and D.M. Billaux, (LBL) UC11
- LBL-21850 Report (W) Proceedings of the International Symposium on Coupled Processes Affecting the Performance of a Nuclear Waste Repository, Sept. 1985, 300p. Presented at the International Symposium on Coupled Processes Affecting the Performance of a Nuclear Waste Repository, Berkeley, CA, September 18-20, 1985, UC70

ENGINEERING

Conference Reports/Books

- LBL-21183 Report (E) Copper-Dihydrogen Acceptors in High-Purity Germanium, Aug. 1986, 4p. Presented at the 18th International Conference on the Physics of Semiconductors, Stockholm, Sweden, August 11-15, 1986, J.M. Kahn, E.E. Haller, and L.M. Falicov, (LBL and UCB) UC25
- LBL-21369 Report (E) CIM in the Research Environment, July 1986, 8p. To be presented at the Annual Meeting of the Applied Cimline Technology Society, Chicago, IL, September 7-9, 1986, J.B. Cummings III, (LBL) UC32
- LBL-21798 Report (E) Construction and Testing of the Mirror Fusion Test Facility Magnets, Aug. 1986, 16p. To be presented at the 1986 Applied Superconductivity Conference, Baltimore, MD, September 28-October 3, 1986, T. Kozman, (LBL) D. Shimer, J. VanSant, and J. Zbasnik, (LLNL) UC20b
- LBL-22157 Report (E) A National Research Laboratory Generic Project Quality Assurance Plan for Research and Development, Sept. 1986, 44p. To be presented at the Thirteenth Annual National Energy Division Conference, Ft. Lauderdale, FL, September 21-24, 1986, E.E. Bain, (Erwin, TN) R.L. Hinckley, (LBL) UC20b

Other Reports

- LBL-21967 Report (E) A Computational Model for Critical Flow Through Intergranular Stress Corrosion Cracks, Aug. 1986, 102p. V.E. Schrock, S.T. Revankar, S.Y. Lee, and C.-H. Wang, (LBL) UC38

MATERIALS AND MOLECULAR RESEARCH

Journal Submissions

- LBL-19535 (I) Combined Grain-Boundary and Lattice Diffusion in Fine-Grained Ceramics, Apr. 1984, 23p. Published in *Adv. Ceram.*, 17, pp. 271-293, 1986, D.R. Olander, (LBL and UCB) UC25

- LBL-20027 Preprint (H) The Relationship Between Shape Resonances and Bond Lengths, Aug. 1986, 32p. Submitted to *J. Chem. Phys.*, M.N. Piancastelli, D.W. Lindle, T.A. Ferrett, and D.A. Shirley, (LBL and UCB) UC4
- LBL-20826 (H) Rotational State Distribution of CO Photofragments from Triplet Ketene, Dec. 1986, 22p. Submitted to *J. Chem. Phys.*, H. Bitto, I-C. Chen, and C.B. Moore, (LBL and UCB) UC34A
- LBL-21393 (I) Stochastic Modelling of the Independent Roles of Particle Size and Grain Size in Transgranular Cleavage Fracture, May 1986, 47p. Submitted to *Metall. Trans., A*, T. Lin and R.O. Ritchie, (LBL and UCB) A.G. Evans, (UC Santa Barbara) UC25
- LBL-21651 Preprint (H) Helium Photoelectron Satellites: Low-Energy Behavior of the $n=3-5$ Lines, Aug. 1986, 15p. Submitted to *Phys. Rev. A*, D.W. Lindle, P.A. Heimann, T.A. Ferrett, and D.A. Shirley, (LBL and UCB) UC4
- LBL-21873 Preprint (I) Determination of As and Ga Planes by Convergent Beam Electron Diffraction, July 1986, 12p. Submitted to *Appl. Phys. Lett.*, Z. Liliental-Weber, (LBL) L. Parechianian-Allen, (UCB) UC34A
- LBL-21932 (H) Molecular Structure and Infrared Spectrum of Protonated Nitrous Oxide, July 1986, 13p. Submitted to *Chem. Phys. Lett.*, J.E. Rice, T.J. Lee, and H.F. Schaefer III, (LBL and UCB) UC4
- LBL-21934 (H) Quantum Monte Carlo Approach to Electronically Excited Molecules, Aug. 1986, 7p. Submitted to *J. Chem. Phys.*, R.M. Grimes, B.L. Hammond, and W.A. Lester, Jr., (LBL and UCB) P.J. Reynolds, (LBL) UC34A
- LBL-21936 (I) Experimental Tests for the Quantum Behavior of a Macroscopic Degree of Freedom, the Phase Difference across a Josephson Junction, July 1986, 71p. Submitted to *Phys. Rev. B*, J.M. Martinis, M.H. Devoret, and J. Clarke, (LBL and UCB) UC34A
- LBL-21958 (I) Optical Efficiency of Far-Infrared Photoconductors, July 1986, 32p. Submitted to *Appl. Opt.*, J-Q. Wang, P.L. Richards, J.W. Beeman, N.M. Haegel, and E.E. Haller, (LBL and UCB) UC25
- LBL-21971 Preprint (O) Observations on the Voltammetry of the Au(111) Single Crystal Surface in Acid and the Effect of Anions, July 1986, 15p. Submitted to *J. Electroanal. Chem.*, A.T. D'Agostino and P.N. Ross, Jr., (LBL) UC25
- LBL-21972 Preprint (O) LEED/Electrochemical Analysis of Au Single Crystals: Structural Effects of Potentiodynamic Cycling on UHV Prepared (111)-($\sqrt{3} \times 22$) and (100)-(5 $\times$ 20) Surfaces, July 1986, 42p. Submitted to *Surf. Sci.*, A.T. D'Agostino and P.N. Ross, Jr., (LBL) UC25
- LBL-21982 Preprint (N) Bis(Pentamethylcyclopentadienyl) Ytterbium (II) as a Lewis Acid and an Electron-Transfer Ligand; Preparation and Crystal Structure of $[\text{Yb}(\text{C}_5\text{Me}_5)_2(\mu\text{-OC})_2\text{Fe}(\text{C}_5\text{H}_4\text{Me})_2]$, Aug. 1986, 36p. Submitted to *Inorg. Chem.*, J.M. Boncello and R.A. Andersen, (LBL and UCB) UC25

- LBL-21983 Preprint (N) Bis(Pentamethylcyclopentadienyl) Ytterbium (II) as a Lewis Acid and an Electron-Transfer Ligand; Preparation, Crystal Structure, and Solution Dynamics of $[\text{Yb}(\text{C}_5\text{Me}_5)_2(\mu\text{-OC})_2\text{Mo}(\text{CO})(\text{C}_5\text{H}_4\text{R})_2]$, Aug. 1986, 49p. Submitted to *Inorg. Chem.*, J.M. Boncella and R.A. Andersen, (LBL and UCB) UC25
- LBL-21986 (O) Zinc Electrodeposit Morphology under Conditions of Fluctuating Current Density, May 1986, 13p. Submitted to *J. Appl. Electrochem.*, V. Jiricny, H. Choi, and J.W. Evans, (LBL and UCB) UC25
- LBL-21994 (I) Nuclear Electric Quadrupole Induction of Atomic Polarization, Aug. 1986, 14p. Submitted to *Phys. Rev. Lett.*, T. Sleator and E.L. Hahn, (UCB) M.B. Heaney, C. Hilbert, and J. Clarke, (LBL and UCB) UC34A
- LBL-21996 Preprint (H) Lamb Shift in Heliumlike Uranium (U^{90+}), Aug. 1986, 8p. Submitted to *Phys. Rev. Lett.*, C.T. Munger and H. Gould, (LBL and UCB) UC25
- LBL-21997 Preprint (H) On the High Resolution HeI Photoelectron Spectrum of the $\text{C}_2\text{D}_4^+(\tilde{\text{X}}^2\text{B}_3)$ Ground State, Aug. 1986, 20p. Submitted to *J. Chem. Phys.*, L. Wang, J.E. Pollard, Y.T. Lee, and D.A. Shirley, (LBL and UCB) UC34A
- LBL-22000 Preprint (H) Molecular-Weight Distributions for Heavy Fossil Fuels from Gel-Permeation Chromatography and Characterization Data, Aug. 1986, 36p. Submitted to *Ind. Eng. Chem.*, P.A. Rodgers, A.L. Creagh, M.M. Prange, and J.M. Prausnitz, (LBL and UCB) UC92b
- LBL-22001 Preprint (H) Correlation of Liquid Heat Capacities for Fossil Fuels Using Characterization Data, Aug. 1986, 50p. Submitted to *Fuel*, P.A. Rodgers, A.L. Creagh, and J.M. Prausnitz, (LBL and UCB) UC92b
- LBL-22007 Preprint (N) Preparation and Crystal Structure of the Mixed-Valence $[\text{Yb}(\text{III},\text{II})]$ Tetranuclear Complex, $(\text{Me}_5\text{C}_5)_6\text{Yb}_4(\mu\text{-F})_4$, Aug. 1986, 45p. Submitted to *Chem. Commun.*, C.J. Burns, D.J. Berg, and R.A. Andersen, (LBL and UCB) UC25
- LBL-22029 (H) Influence of Ethylene of the Hydrogenation of CO over Ruthenium, Aug. 1986, 11p. Submitted to *J. Phys. Chem.*, D.S. Jordan, and A.T. Bell, (LBL and UCB) UC4
- LBL-22064 (H) The Dipositive Dimeric Ion Hg_2^{+2} : A Theoretical Study, Aug. 1986, 18p. Submitted to *J. Phys. Chem.*, R.P. Neisler and K.S. Pitzer, (LBL and UCB) UC34A
- LBL-22108 (I) Investigation of Iron Oxide Reduction by TEM, July 1986, 54p. Submitted to *Metall. Trans.*, M-F. Rau, D. Rieck, and J.W. Evans, (LBL and UCB) UC4
- LBL-22128 (I) Noise Rise in Parametric Amplifiers, Aug. 1986, 17p. Submitted to *Phys. Rev. Lett.*, P. Bryant, (LBL and UCB) K. Wiesenfeld, (BNL) B. McNamara, (UCSC and UCB) UC37
- LBL-22171 (H) The Restricted Primitive Model for Ionic Fluids: Properties of the Vapor and the Critical Region, Sept. 1986, 25p. Submitted to *Mol. Phys.*, K.S. Pitzer and D.R. Schreiber, (LBL and UCB) UC4

Conference Reports/Books

- LBL-21332 Report (I) Characterisation of Inorganic Materials, Dec. 1985, 16p. To be presented at the ICEM XIth International Congress on Electron Microscopy, Kyoto, Japan, August 31–September 7, 1986, G. Thomas, (LBL) UC34A
- LBL-21856 Report (H) Tests of Quantum Electrodynamics in Few-Electron Very High-Z Ions, Aug. 1986, 16p. Invited paper presented at the Symposium on Relativistic Many-Body Problems, Trieste, Italy, June 30–July 4, 1986; and to be published in *Phys. Scr.*, H. Gould and C.T. Munger, (LBL) UC25
- LBL-21867 Report (O) Modeling of Porous Electrodes in Molten-Salt Systems, Aug. 1986, 17p. Presented at the International Workshop on High-Temperature Molten Salt Batteries, ANL, Argonne, IL, April 16–18, 1986, J. Newman, (LBL and UCB) UC94cc
- LBL-21989 Report (I) Picosecond Time-Resolved Raman Scattering from Photoexcited Electron-Hole Plasmas in GaAs, Aug. 1986, 4p. Presented at the 18th International Conference on the Physics of Semiconductors, Stockholm, Sweden, August 11–15, 1986, Y. Huang and P.Y. Yu, (LBL and UCB) UC25
- LBL-21990 Report (I) Stability of the Si Lattice: Electron-Phonon Interactions and Superconductivity in Hexagonal Si, Aug. 1986, 5p. Presented at the 18th International Conference on the Physics of Semiconductors, Stockholm, Sweden, August 11–15, 1986, D. Erskine, P.Y. Yu, K.J. Chang and M.L. Cohen, (LBL and UCB) UC25

Other Reports

- LBL-21483 Report (H) Multinuclear Magnetic Resonance Study of the Bis-iminodiacetate Nickel(II) Complex in Aqueous Solution, Apr. 1986, 115p. Ph.D., K.A. Klotter, (LBL) UC4

NUCLEAR SCIENCE

Journal Submissions

- LBL-20104 Preprint (S) Masses of ^{77}Kr and ^{75}Kr , Aug. 1986, 22p. Submitted to *Phys. Rev. C*, D.M. Moltz, (LBL) A.C. Betker, J.P. Sullivan, R.H. Burch, C.A. Gagliardi, and R.E. Tribble, (Texas A&M Univ.) K.S. Toth, (ORNL) F.T. Avignone III, (Univ. S. Carolina) UC34C
- LBL-21383 Preprint (S) Estimates of the Influence of Nuclear Deformations and Shell Effects on the Lifetimes of Exotic Radioactivities, Mar. 1986, 29p. Submitted to *Nucl. Phys.*, Y.-J. Shi and W.J. Swiatecki, (LBL) UC34C
- LBL-21573 Preprint (S) FREESCO: Statistical Event Generator for Nuclear Collisions, Aug. 1986, 20p. Submitted to *Comput. Phys. Commun.*, G. Fai and J. Randrup, (LBL) UC34C
- LBL-21632 Preprint (S) Quantum Transport Theory for Abelian Plasmas, Aug. 1986, 32p. Submitted to *Ann. Phys.*, D. Vasak, M. Gyulassy, and H.-T. Elze, (LBL) UC34D

- LBL-21880 Preprint (S) Bosonization of Conformal Ghosts in Witten's String Theory, July 1986, 20p. Submitted to *Phys. Lett. B*, A. Iwazaki, (LBL) UC34D
- LBL-21882 Preprint (S) Partition of Excitation Energy in Peripheral Heavy-Ion Reactions, July 1986, 15p. Submitted to *Phys. Lett. B*, H.R. Schmidt, S.B. Gazes, Y. Chan, R. Kamermans, and R.G. Stokstad, (LBL) UC34C
- LBL-21890 Preprint (S) Pion Interferometry of Ultra-Relativistic Hadronic Collisions, July 1986, 11p. Submitted to *Phys. Lett. B*, K. Kolehmainen and M. Gyulassy, (LBL) UC34C
- LBL-21991 Preprint (S) Isomeric Levels in ^{180}Lu and the Nucleosynthesis of $^{180}\text{Ta}^m$ Aug. 1986, 18p. Submitted to *Phys. Rev. C*, K.T. Lesko, E.B. Norman, D.M. Moltz, R.M. Larimer, and S.G. Crane, (LBL) S.E. Kellogg, (Univ. Washington) UC34C
- LBL-21992 Preprint (S) Search for the Beta-Decay of ^{180}Lu to $^{180}\text{Hf}^m$, Aug. 1986, 27p. Submitted to *Phys. Rev. C*, S.E. Kellogg, (Univ. Washington) E.B. Norman, (LBL and Univ. Washington) UC34C
- LBL-22003 Preprint (S) Pion Production in High Energy Nucleus-Nucleus Collisions, Aug. 1986, 13p. Submitted to *Phys. Rev. Lett.*, J.W. Harris, G. Odyniec, H.G. Pugh, L.S. Schroeder, and M.L. Tincknell, (LBL) W. Rauch, R. Stock, (Univ. Frankfurt, W. Germany) R. Bock, R. Brockmann, A. Sandoval, H. Ströbele, (GSI) R.E. Renfordt and D. Schall, (Univ. Heidelberg, W. Germany) D. Bangert, (Univ. Marsburg, W. Germany) J.P. Sullivan and K.L. Wolf, (Texas A&M Univ.) A. Dacal, C. Guerra, and M.E. Ortiz, (UNAM, Mexico) UC34C
- LBL-22006 Preprint (S) The Beta-Delayed Proton Decay of ^{61}Ge , August 1986, 21p. Submitted to *Phys. Rev. C*, M.A.C. Hotchkis, J.E. Reiff, D.J. Vieira, F. Blonnigen, T.F. Lang, D.M. Moltz, X. Xu, and J. Cerny, (LBL and UCB) UC34C

Conference Reports/Books

- LBL-21617 Report (S) Delayed Proton Activities Produced in $^{24}\text{Mg} + \text{Ca}$ and $^{28}\text{Si} + \text{Ca}$ Reactions, June 1986, 9p. Presented at the International Research Conference on Nuclear Structure, Reactions and Symmetries, Dubrovnik, Yugoslavia, June 5-14, 1986, M.A.C. Hotchkis, D.M. Moltz, J.E. Reiff, F. Blonnigen, T.F. Lang, X. Xu, and J. Cerny, (LBL and UCB) UC34C
- LBL-21761 Report (S) The Nuclear Matter Equation of State from Relativistic Heavy Ions to Supernovae, June 1986, 10p. Presented at the 2nd Conference on the Intersections between Particle and Nuclear Physics, Lake Louise, Canada, May 25-31, 1986, J.W. Harris, (LBL) UC34C
- LBL-21762 Report (S) Summary of the Heavy Ion Physics Sessions at Lake Louise, June 1986, 8p. Presented at the 2nd Conference on the Intersections between Particle and Nuclear Physics, Lake Louise, Canada, May 25-31, 1986, J.W. Harris, (LBL) UC34C
- LBL-21863 Report (S) High-Spin Nuclear Spectroscopy, July 1986, 96p. Presented at the IX Workshop on Nuclear Physics, Buenos Aires, Argentina, June 23-July 4, 1986; and to be published in the Proceedings, R.M. Diamond, (LBL) UC34C

LBL-21974 Report (S) Probing Nuclear Matter with Dileptons, June 1986, 11p. Presented at the VIII International Seminar on High Energy Physics Problems, Relativistic Nuclear Physics and Quantum Chromodynamics, Dubna, USSR, June 19-24, 1986, L.S. Schroeder, (LBL) UC34D

LBL-22057 Report (S) μ SR-86 Report on the 4th International Conference at Uppsala, Aug. 1986, 17p. To be published in the Proceedings of the 4th International Conference μ SR-86, Uppsala, Sweden, June 23-27, 1986, K.M. Crowe, (LBL and UCB) UC34D

Abstracts

LBL-22017 Abs. (S) High Energy Gamma Emission Following Heavy Ion Collisions, Aug. 1986, 1p. To be presented at the 1986 Fall Meeting of the American Physical Society, Vancouver, BC, Canada, October 9-11, 1986, C.A. Gossett, J.A. Behr, J.H. Gundlach, and K.A. Snover, (Univ. Washington) K.T. Lesko and E.B. Norman, (LBL) UC34C

LBL-22018 Abs. (S) High-Spin Spectroscopy of ^{165}Hf , Aug. 1986, 1p. To be presented at the 1986 Fall Meeting of the American Physical Society, Vancouver, BC, Canada, October 9-11, 1986, E.M. Beck, J.C. Bacelar, M.A. Deleplanque, R.M. Diamond, and F.S. Stephens, (LBL) J.E. Draper, (U.C. Davis) UC34C

LBL-22019 Abs. (S) Some Recent Developments in High Spin Physics, Aug. 1986, 1p. Invited paper to be presented at the 1986 Fall Meeting of the American Physical Society, Vancouver, BC, Canada, October 9-11, 1986, F.S. Stephens, (LBL) UC34C

LBL-22020 Abs. (S) First Measured Performance of the Bevalac Di-Lepton Spectrometer (DLS), Aug. 1986, 1p. To be presented at the 1986 Fall Meeting of the American Physical Society, Vancouver, BC, Canada, October 9-11, 1986, R. Roche, G. Claesson, R. Fulton, D. Hendrie, G. Krebs, E. Lallier, H. Matis, J. Miller, T. Mulera, C. Naudet, H. Pugh, L. Schroeder, and A. Yegneswaran, (LBL) J. Carroll, J. Gordon, G. Igo, S. Trentalange, Z.F. Wang, and J. Bystricky, (UCLA) T. Hallman and L. Madansky, (Johns Hopkins Univ.) J.-F. Gilot, P. Kirk, and S. Christo, (LSU) D. Miller, (Northwestern Univ.) G. Landaud, (Univ. Clermont-Fd.) UC34C

LBL-22021 Abs. (S) Lifetimes of High Spin States in $^{158,159,160}\text{Er}$ and $^{164,165,166}\text{Yb}$, Aug. 1986, 1p. To be presented at the 1986 Fall Meeting of the American Physical Society, Vancouver, BC, Canada, October 9-11, 1986, J.C. Bacelar, E.M. Beck, M.A. Deleplanque, R.M. Diamond, and F.S. Stephens, (LBL) J.E. Draper, (U.C. Davis) UC34C

LBL-22022 Abs. (S) Nuclear Beams as Probes of QCD Matter, Aug. 1986, 1p. Invited paper to be presented at the 1986 Fall Meeting of the American Physical Society, Vancouver, BC, Canada, October 9-11, 1986, M. Gyulassy, (LBL) UC34C

LBL-22023 Abs. (S) Core Excitations in ^{150}Dy , Aug. 1986, 1p. Invited paper to be presented at the 1986 Fall Meeting of the American Physical Society, Vancouver, BC, Canada, October 9-11, 1986, M.A. Deleplanque, J.C. Bacelar, E.M. Beck, R.M. Diamond, and F.S. Stephens, (LBL) J.E. Draper, (UC Davis) UC34C

PHYSICS

Journal Submissions

- LBL-21606 (F) Supersymmetry Breaking in the Observable Sector of Superstring Models, May 1986, 10p., Submitted to *Phys. Lett. B*, P. Binétruy, (Univ. Chicago) S. Dawson and I. Hinchliffe, (LBL) UC34D
- LBL-21649 (F) Transverse Momentum Signatures for Heavy Higgs Bosons, June 1986, 24p. To be submitted for publication, R.N. Cahn, (LBL) S.D. Ellis, (Univ. Washington) R. Kleiss, (CERN) W.J. Stirling, (Univ. Durham) UC34D
- LBL-21872 (F) A Comparison of the Particle Flow in Three-Jet and Radiative Two-Jet Events from e^+e^- Annihilation at $E_{\text{cm}} = 29$ GeV, July 1986, 6p., SLAC-PUB-4030, Submitted to *Phys. Rev. Lett.*, P.D. Sheldon, G.H. Trilling, A. Petersen, G. Abrams, D. Amidei, A.R. Baden, T. Barklow, A.M. Boyarski, J. Boyer, P.R. Burchat, D.L. Burke, F. Butler, J.M. Dorfan, G.J. Feldman, G. Gidal, L. Gladney, M.S. Gold, G. Goldhaber, L. Golding, J. Haggerty, G. Hanson, K. Hayes, D. Herrup, R.J. Hollebeek, W.R. Innes, J.A. Jaros, I. Juricic, J.A. Kadyk, D. Karlen, A.J. Lankford, R.R. Larsen, B.W. LeClaire, M. Levi, N.S. Lockyer, V. Lüth, C. Matteuzzi, M.E. Nelson, R.A. Ong, M.L. Perl, B. Richter, K. Riles, M.C. Ross, P.C. Rowson, T. Schaad, H. Schellman, W.B. Schmidke, C. de la Vaissiere, D.R. Wood, J.M. Yelton, and C. Zaiser, (LBL, UCB, SLAC, and Harvard Univ.) UC34D
- LBL-21875 Preprint (F) The Bolometric Light Curve of a Carbon Deflagration Supernova, July 1986, 23p. Submitted to *Astrophys. J.*, J.R. Graham, (LBL) UC34B
- LBL-21914 (F) Heavy Fermion Production in the Effective W Approximation, July 1986, 21p. Submitted to *Nucl. Phys. B*, S. Dawson, (LBL) S.S.D. Willenbrock, (Univ. Texas) UC34D
- LBL-21915 (F) Measurement of the Branching Fractions of the τ Lepton Using a Tagged Sample of τ Decays, June 1986, 31p., SLAC-PUB-4006 Submitted to *Phys. Rev. D*, P.R. Burchat, G.J. Feldman, T. Barklow, A.M. Boyarski, D.L. Burke, J.M. Dorfan, L. Gladney, G. Hanson, K. Hayes, R.J. Hollebeek, W.R. Innes, J.A. Jaros, D. Karlen, A.J. Lankford, R.R. Larsen, B.W. LeClaire, N.S. Lockyer, V. Lüth, C. Matteuzzi, R.A. Ong, M.L. Perl, B. Richter, K. Riles, M.C. Ross, J.M. Yelton, and C. Zaiser, (SLAC) G.S. Abrams, D. Amidei, A.R. Baden, J. Boyer, F. Butler, G. Gidal, M.S. Gold, G. Goldhaber, L. Golding, J. Haggerty, D. Herrup, I. Juricic, J.A. Kadyk, M.E. Nelson, P.C. Rowson, H. Schellman, W.B. Schmidke, P.D. Sheldon, G.H. Trilling, C. de la Vaissiere, and D.R. Wood, (LBL and UCB) M.E. Levi and T. Schaad, (Harvard Univ.) UC34D
- LBL-21965 (F) Problems for Superstring Models with Vacuum Expectation Values for Conjugate Sneutrinos, June 1986, 8p. Submitted to *Phys. Lett. B*, B. Campbell, (Univ. Alberta, Canada and CERN) J. Ellis and D.V. Nanopoulos, (CERN) M.K. Gaillard, (LBL, UCB and CERN) K.A. Olive, (Univ. Minnesota and CERN) UC34D
- LBL-21987 Preprint (F) IRAS Observations of Collisionally Heated Dust in Large Magellanic Cloud Supernova Remnants, Aug. 1986, 33p. Submitted to *Astrophys. J.*, J.R. Graham, (LBL and Imperial College, U.K.) A. Evans and J.S. Albinson, (Univ. of Keele, U.K.) M.F. Bode, (Lancashire Polytechnic Univ., U.K.) W.P.S. Meikle, (Imperial College, U.K.) UC34B

LBL-22081 (F) A Geometrical Approach to String Field Theory, Aug. 1986, 8p. Submitted to *Nucl. Phys. B*, K. Bardakci, (LBL and UCB) UC34D

Conference Reports/Books

LBL-21710 Report (F) Computation of Invariant Tori and Acceleration of the K.A.M. Algorithm, June 1986, 3p., SLAC-PUB-3994 Presented at the International Conference on the Physics of Phase Space, College Park, MD, May 20-23, 1986, R.L. Warnock, (LBL) R.D. Ruth, (SLAC) UC32

LBL-21735 Report (F) The n-Loop String Amplitude, June 1986, 21p. Presented at the Second Nobel Symposium on Elementary Particle Physics, Marstrand, Sweden, June 2-7, 1986, S. Mandelstam, (UCB) UC34D

LBL-21913 Report (F) Gaugino Masses in Superstring Inspired Models, Aug. 1986, 3p., Presented at the XXIII International Conference on High Energy Physics, Berkeley, CA, July 16-23, 1986, S. Dawson, (LBL) UC34D

LBL-21920 Report (F) Comparison of $q\bar{q}g$ and $q\bar{q}\gamma$ Events in e^+e^- Annihilation at PEP, July 1986, 11p. Presented at the XXIII International Conference on High Energy Physics, Berkeley, CA, July 16-23, 1986, W. Hofmann, (LBL) UC34D

LBL-22027 Report (F) Harmonic Superspace Formalism and the Consistent Chiral Anomaly, Aug. 1986, 4p. Presented at the XXIII International Conference on High Energy Physics, Berkeley, CA, July 16-23, 1986, W. Li, (LBL) UC34D

LBL-22083 Report (F) The Physics of Very High Energy Hadron-Hadron Colliders, Sept. 1986, 13p. Presented at the XXIII International Conference on High Energy Physics, Berkeley, CA, July 16-23, 1986, I. Hinchliffe, (LBL) UC34D

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