

John Doe

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Job Objective

A challenging Materials Development / Research Management position with a high-growth engineering company specializing in manufacturing and testing of semiconductors, superconductors, vacuum and surface science instrumentation, and other high tech materials.

Qualifications Overview

- Well-qualified and technically-proficient **Research Scientist** with more than sixteen years laboratory experience and excellent academic qualifications.
- Substantial experience in sophisticated research techniques and technologies: surface analysis, stress analysis, material testing, failure analysis, mechanical testing, surface technology, deposition systems, semiconductors, thin films, vacuum and surface science instrumentation.
- Organized, take-charge professional with exceptional follow through abilities and detail orientation; able to plan and oversee projects from concept to successful conclusion.
- Demonstrated ability to efficiently prioritize a broad range of responsibilities in order to achieve maximum level of operating effectiveness.
- Expertise in lab and field research, data collection/analysis and project management.
- Extensive experience working with cross-functional scientific and research teams.

Education & Training

Ph.D., Condensed Matter Physics, Name of University , City, ST	1984
M.Sc., Physics (Physical Methods of Analysis), Name of University , City, ST	1979
B.Sc., Physics (with Electronics), Name of University , City, ST	1978
Instrumentation Engineer Trainee, APX Scientific Instruments , City, ST	2002
Postdoctoral Research Fellow, Dept. of Electrical Engineering, Name of University , City, ST	1985

Professional Experience

Visiting Scientist (Trainee Beam Line Scientist)	01/02 - 06/02
Name of Facility, Name of University	03/03 - 07/03

- Within first week was able to résumé 75% of the beam line scientist duties and managed night shift without assistance from the beam line scientist.
- Worked as co-investigator on high technology materials, such as a project with microchip maker, Applied Materials Corporation, on properties of ultra thin films of SiO₂N_x/si wafers and was involved in research in nano-structures and electronic properties of thin films of great technological importance.
- Supervised Post Doc. during lab development and helped design DC Magnetron Sputtering System and Thin film deposition and thickness monitoring system and helped setup Electron Spectrum Analyser, which was damaged during transit from [name of] research lab to LBL.
- Designed and installed a computer controlled auto calibration system which significantly saved time and automatically recalibrated the beam of energy to eliminate angular errors.
- Redesigned and installed the photon beam input current monitoring grid assembly for EXANES study which eliminated the grid vibration resulting in a significant ratio improvement in the final spectrum.
- Wrote [name of] program and built servomotor assembly which allowed the user to automatically align the sample at pre-programmed positions, insertion, analysis, sputtering, and film deposition; and allowed dynamic control of the sample for high precision angle resolved spectroscopy.

Associate Professor of Physics

09/93 – 08/01

Assistant Professor of Physics

02/87 – 09/93

Name of University, City, ST

Management:

- Managed Surface Science Laboratory at Physics Department (1989 – 1998) and introduced collaboration between Surface Science lab and local industry R & D labs.
- Managed research projects originated both inside and outside the university and coordinated group research activities and PhD and MS research projects; and promoted research collaboration with local industry and research centers through organizing short courses and workshops.
- Upgraded departmental mechanical/machine shop hardware reducing maintenance cost by one-third and implemented professional training program for mechanical/machine shop personnel which increased productivity and efficiency significantly.
- Managed freshman physics labs and graduate labs (1995 – 2001) and supervised Ph.D., M.Sc. Thesis and Graduate Lab projects.

Research & Development:

- Developed the research lab to study high voltage electrical breakdown in broad area electrodes in compressed gasses.
- Designed and built six channel pulse height analyzer that was subsequently used to study electron emission (Field Electron Emission) from the electrodes as a function varying mixtures of gasses.
- Designed the chamber and the detector for studying Field Electron Emission, the phenomenon thought to be responsible for electrical breakdown.
- Developed special lab at [Name of] University for studying electrical breakdown field electron emission in broad area electrodes under compressed gasses.
- Designed and built a fracture stage for VG ESCA Lab for fracturing sample in UHV for studying fresh surfaces that was used primarily for studying ceramic glasses.
- Designed and built UHV chamber for preparing laser evaporated thin films, (chambers were built under supervision in Physics department workshop).
- Redesigned VG electron beam heating power supply and installed purpose built power booster to allow more controlled heating and extended the temperature range from 1000 °C to 1600 °C to facilitate flashing sample.
- Designed and built a trip monitoring and emergency power fail system to prevent UHV chambers from being contaminated with oil from turbo backing pumps and keeping vacuum in until system can be restarted safely when power returned and maintained the correct temperature of the X-ray gun and water chillers.
- Redesigned the closed circuit water cooling system for the x-ray gun so that high water pressure was no longer necessary to force water through the tubing which resulted in a significant reduction in damaged tubing.

Teaching:

- Taught, developed and coordinated freshman and senior-level undergraduate courses for 15 years. Innovative methods and course material impressed [Name of] University so much that they adopted course material for use in physics courses; also taught graduate special topic courses related to Surface Physics and Materials Science.
- Modernized labs, introduced computers, designed new experiments (both conventional and computer controlled), and authored lab manuals for freshman and senior labs; developed coursework, experiments and authored Laboratory Manual for Physics 101, 102, 131, 132, 161, 201, 202, 302, 303, 304 and 403 labs.
- Developed graduate lab to introduce MS students to current research trends in the department and Research Institute; proposed and developed the university's first Computer Aided Learning Lab (CAL Labs); university adopted and promoted the idea which led to the creation of 17 additional CAL Labs.
- Designed demonstrations for Large Lecture Theater teaching that were later adopted for use by department.

Installation Engineer and Product Engineer

Jun. 85 – Feb. 87

Name of Company, City, ST

- Built and tested systems per client specifications which often required redesigning the existing techniques and the detection system; performed onsite installations, repairs and customer training.
- Spent six months on industrial electronic training and vacuum engineering training and received three months' training on Cathode Ray Tube manufacturing at [name of company] in [City, ST]

Computer Skills

Web authoring: Microsoft Front Page 2000, Netobject Fusion, Macromedia Flash and Adobe Page Mill, Physics Department Webmaster 1999 – 2001

Networking: Client-server Networking on MS Windows NT/2000; Peer networking using MS windows 95/98, OS2 warp, Mac OS. Ethernet and Token ring networking using TCP/IP, AppleShare and AppleTalk

Operating systems: MS Windows NT Workstation and Server, Windows XP, Window 2000 Professional, Server and Advanced Server, MS Windows 9x, OS2 WARP, Macintosh all operating systems including OS X

Business software: MS Office 2000, MS Office XP, MS Office X

Research Interest

- Doping effects in High-Tc Bi₂Sr₂CaCu₂O_y Superconductors by X-ray absorption near-edge structure spectroscopy using Synchrotron radiation.
- Electrical, Magnetic, and Structural Properties of Amorphous Materials.
- Surface properties of semiconductors: oxidation, surface segregation of dopants.
- Defects and Materials Properties Relationship.
- Growth Kinetics of Oxide Thin Films on Semiconductors using XPS. Films are prepared in-situ using specially designed High Pressure Gas Cell.
- Study of Optical, Electrical, and Electronic properties of High Temperature Superconductor and Metal Oxide thin films prepared by Electron Beam evaporation and Laser evaporation.
- Applications of Surface Technique: X-ray Photoelectron Spectroscopy (XPS), Low Energy Electron Diffraction (LEED), Auger Electron Spectroscopy (AES), Scanning Auger Microscopy (SAM), Scanning Electron Microscopy (SEM), Energy Dispersive X-ray Analysis (EDX), Ultraviolet Photoelectron Spectroscopy (UPS), Ion Scattering Spectroscopy (ISS), Angled Resolved Photoelectron Spectroscopy (ARPES), Ion Induced depth profiling, Mass Analyzers and IR-UV spectrometers.

Publications and Conferences

- 1) M.A. Jones, L. Williams, A. E. D. Smith and A. E. Doe, "Name of Article", *Name of Journal*, Oxford (1985).
- 2) M.A.Jones, A.E.D. Smith, A.E. Doe, "Name of Article", *Name of Journal*, V 19-23 Sept. 1988.
- 3) Z. Smith, M. S. Wilson, O.B. Dabrei and M.A. Jones, "Name of article", *Name of Journal*, 12-14 March 1988., JFYHM, Acme.
- 4) M.A. Jones, S.M.A Duran and E.E. Kirk, "Name of article", *Name of Journal*, New York, 13-16 April 1992. Proceedings Published by University of New York, p187.
- 5) A.E. Doe, M.A. Jones and A.E.D. Smith, "Name of Article", IEEE Transactions on Dielectrics and Electrical Insulation, 4, 1, (February 1999).
- 6) N. Smith, A. L. Moore, and M. Jones, "Name of Article", in "Recent Developments in Material Processing and Modeling", Ed. by XYZ Press, (1999) 346-369.
- 7) N. Smith and M. A. Jones, "Name of Article" , ICSOS-6, Vancouver, Canada, August 19-30, 1998.