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Present position (Till August 31, 2005): NASA Administrator's Fellow, Exploration Science and Technology Division, XD40, NASA, Marshall Space Flight Center, AL 35812
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Education:

M.S. (Physics), 1958; Ph. D. (Solid State Physics), 1963, University of Agra, India

Major Achievements: Selected as a NASA Administrator's Fellow in June 2004. Selected as the University Eminent Scholar in January, 1999. Obtained over \$6 million research funding in the last twenty-seven years. Gave invited talks in US, Russia, India, Austria, and Japan. Selected by NASA as a principal investigator for flight experiments on Spacelab-3 mission, April 1985 and The First International Microgravity Laboratory (IML-1) mission, Jan 1992.

Memberships: SPIE (Fellow), American Physical Society, American Association of Crystal Growth, Sigma Xi

Reference Source: American Men and Women of Science, Who's Who in Technology .

Employment History

Present- University Eminent Scholar and Professor of Physics, Alabama A&M University.
1999-2001- AAMU, Chairman, Department of Physics; 1975-1998- Associate Professor and later Professor of Physics, AAMU; 1973-1975- Associate Professor of Physics, Paine College, Augusta, GA
1971-1973- University of Alabama in Huntsville, Senior Research Associate; 1968-1970, Indian Institute of Technology, Delhi, India, Sr. Scientist and Asst. Prof. ; 1964-1967- National Academy of Sciences, Resident Res. Associate at NASA/Marshall Space Flight Center, Huntsville, AL

Publications: Selected out of about 90 publications:

1. Growth and Properties of Triglycine Sulfate (TGS) Crystals: Review, R.B.Lal and A.K.Batra, *Ferroelectrics*, 142, 51(1993)
2. Growth of Large MNA:MAP Crystals for Nonlinear Optical Applications, H.W. Zhang, A.K. Batra and R.B. Lal, *J. Crystal Growth* ,**137**,14(1994).
3. Growth and properties of urea doped triglycine sulfate (UrTGS) crystals, J.M. Chang, A.K. Batra, and R.B. Lal, *J. Crystal Growth*, **158**, 284 (1996).
4. Investigation of Temperature Dependence and Impurity Content on Growth Rate of KDP Crystals, S. Seif, J.M. Chang, Kamala Bhat, B. Penn, R.B. Lal, *Crystal Growth and Design*, **Vol.1**, 359 (2001)
5. Characterization of Doped TGS Crystals for Infrared Devices, Jiann-Min Chang, Ashok. K. Batra, Ravindra B. Lal, *Crystal Growth and Design* , Vol.2, No.5., 431 (2002)
6. Growth and characterization of doped DTGS crystals for infrared sensing devices, A.K. Batra, M.D.Aggarwal, and R.B. Lal, *Materials Letters*, **57**, 3943 (2003)

7. Effect of Cr (III) impurity on the growth kinetics of potassium dihydrogen phosphate and triglycine sulfate crystals grown from aqueous solution, Selemanni Seif, Kamala Bhat, Ashok K. Batra, Mohan Aggarwal, and Ravindra B. Lal, *Materials Letters*, **58**, 991 (2004)
- 8 . Predicted Frequency Response of Integrated Pyroelectric PNZT Infrared Detectors, A.K.Batra, J. R. Curie, M. D. Aggarwal, R. B. Lal, Sushma Kotru, Corina Nistorica, and R. K. Pandey, *Integrated Ferroelectric*, vol. 63, pp 191-195, 2004.
9. Studies on DTGS:PVDF Composites for Pyroelectric Infrared Detectors, A. K. Batra, M. Simmons, Padmaja Guggilla, M. D. Aggarwal, and R. B. Lal, *Integrated Ferroelectrics*, Vol. 63, pp 161-163, 2004
10. Studies of Electric Conduction in Pyroelectric DTGS:PVDF composites, A. K. Batra, M. Simmons, Padmaja Guggilla, M. D. Aggarwal, and R. B. Lal, *Proc. SPIE, "Organic Photonic Materials and Devices VI"* Vol. 5351 p. 298-302, 2004
11. The voltage Transformation Behavior in Unloaded Piezoelectric Transformers, S. Seif, M.A. Alim, A.K. Batra, M.D. Aggarwal, and R.B. Lal, *Ferroelectrics*, 313, 33-54, 2004
12. Pyroelectric Properties of pure and doped Lithium Niobate crystals for infrared sensors, Tesfye Gebre, Ashok.K. Batra, Padmaja Guggilla, Mohan. D. Aggarwal, and Ravindra B. Lal, *Ferroelectric Letters*, 31, 131-139, 2004

Synergistic Activities: Developed new courses in the area of Space Sciences for the MS degree concentration . Co-PI for a planning grant proposal to NSF under the Advanced Technological Education program.

Collaborators and Other Affiliations: Conference chair for a SPIE conference on Operational Characteristics of NLO Materials to be held in August 2005. Research collaboration with Dr. R. Reddy at University of Alabama, Dr. Kirk Fuller at the University of Alabama in Huntsville, Dr. Amar Bhalla. Penn. State University

Names of Graduate Students Supervised as Major Advisor

Mohsen Banan, M.S. (1989); Yongkee Kim, Ph.D. (1998); Jiann Min Chang, Ph.D. (1997); Leroy Salary, Jr., Ph.D. (1999); Sandeep Singh, MS (1988); Stephen Pearson, MS (1991); S. Seif, MS (2001), Michelle Simmons, MS (2002); S.Seif, Ph.D. (2005), Praveena Kommidi, MS (2005).

Summary of Grants and Contracts

Growth of GaP crystals for IR Windows, DOD/DEPSCoR, (2001-2004);
Space Science Education and Sun-Earth Connection, NASA/OSS (2001-2005)
NSF, HBCU Doctoral Capacity Building Grant (RISE), 2002-2005. (PI)
NSF Center for Integrated Space Weather Modeling (CISM), Subcontract from Boston University (2003-2007)
DOE/EPSCoR on Surface Modification of Fuel Cells for Bipolar Plates, Subcontract Univ. of Alabama, (2002-2006)