



**DESHBANDHU COLLEGE**  
**(UNIVERSITY OF DELHI)**  
**KALKAJI, NEW DELHI - 110019**  
Faculty Details Proforma for College Website

Title	DR.	First Name	KAKOLI	Last Name	BERA	Photograph
Designation	ASSOCIATE PROFESSOR (PHYSICS)					
Address	DESHBANDHU COLLEGE (UNIVERSITY OF DELHI) KALKAJI, NEW DELHI – 110019					
Phone No. Office	011-26439565/26449396/26235542					
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Web-Page						
Educational Qualifications						
Degree	Institution				Year	
Ph.D. (Submitted)	DELHI UNIVERSITY				1998	
PG	DELHI UNIVERSITY				1991	
UG	DELHI UNIVERSITY				1989	
Career Profile						
<ol style="list-style-type: none"> <li>Teaching B.Sc. (Hons.) Physics and B.Sc. (Prog.) Physical Sciences and Applied Physical Sciences students at Deshbandhu College, University of Delhi, since 1997.</li> <li>Gave few special lectures on the request of professor L. S. Kothari to the students of M.Sc. (final) with specialization in Advanced solid state theory on the topic “fullerites and their properties particularly concerning their superconducting behaviour” in the year 1996.</li> </ol>						
Administrative Assignments						
DEPARTMENTAL RESEARCH COMMITTEE(DRC) MEMBER OF THE DEPARTMENT OF PHYSICS AND ASTROPHYSICS FOR TWO YEARS (2010-2012) w.e.f 28/08/2010 APPROVED BY THE CHAIRMAN, BOARD OF RESEARCH STUDIES.						
Areas of Interest/Specialization						
<ol style="list-style-type: none"> <li>SOLID STATE PHYSICS (THEORITICAL)</li> <li>CORRELATION FUNCTIONS IN CONDENSED MATTER PHYSICS</li> <li>FULLERENES</li> <li>QUANTUM AND CLASSICAL RARE HOT PLASMAS</li> </ol>						
Subjects Taught						
	B.Sc (H) PHYSICS (1 <sup>ST</sup> YEAR)	MECHANICS		MATHEMATICAL PHYSICS-I		
	B.Sc (H) PHYSICS(2 <sup>ND</sup> YEAR)	MATHEMATICAL PHYSICS-II		THERMAL PHYSICS		
	B.Sc (H) PHYSICS(3 <sup>RD</sup> YEAR)	STATISTICAL PHYSICS		SOLID STATE PHYSICS		
	B.Sc(PROG.) PHYSICAL SCIENCES (1 <sup>ST</sup> , 2 <sup>ND</sup> , 3 <sup>RD</sup> YEAR)	MECHANICS		MODERN PHYSICS		
	B.Sc (PROG.)APPLIED PHYSICAL SCIENCES (3 <sup>RD</sup> YEAR)	ELECRCITY AND MAGNETISM				
Research Guidance						

<b>Publications Profile</b>
<u>LIST OF PUBLICATIONS ATTACHED</u>
<b>Conference Organization/ Presentations/Schools</b>
LIST OF CONFERENCE ATTENDED /PRESENTATIONS ATTACHED
<b>Research Projects (Major Grants/Research Collaboration)</b>
<b>INNOVATION PROJECTS 2015-16 (UNIVERSITY OF DELHI)</b> <b>PROJECT TITLE: "SPINTRONIC DEVICES FOR DATA STORAGE APPLICATION"</b>
<b>Awards and Distinctions</b>
Qualified at the joint CSIR/UGC test for JRF and Eligibility for Lecturership held on June 1993.
<b>Association With Professional Bodies</b>
<ol style="list-style-type: none"> <li>1. <i>Teacher-in-charge of the Physics Department (2008 to 2010)</i></li> <li>2. <i>Sports Committee member of the college (2007 to 2009)</i></li> <li>3. <i>Sub-committee member of the AWP committee of the college (2008 to 2010)</i></li> <li>4. <i>Co-convenor of the AWP Committee (Science) of the college (2007 to 2008)</i></li> <li>5. <i>Cultural Committee member of the college (2006 to 2007)</i></li> <li>6. <i>Purchase Committee member of the college (2007 to 2009)</i></li> <li>7. <i>Convenor of the Physics Society (2001 to 2005)</i></li> </ol>
<b>Other Activities</b>



Signature of Faculty  
Member

## List of publications of Dr. Kakoli Bera

1. **“Energy dependent total thermal neutron scattering cross-section and transport of a neutron pulse in fullerite at 300K”**, Proceedings of SPIE Vol. 5219 (2003) Nanotubes & Nanowires, edited by Akhlesh Lakhtakia.  
Co-authors: S.P.Tewari, P.Silotia, Aditya Saxena.
2. **“Differential and total phonon frequency distribution functions from the corresponding measured temperature dependent mean square displacements in an anisotropic crystal using unfolding technique”**, Modern Physics B, Vol. 13, No.11, 1455-1461 (1999).  
Co-authors: S.P.Tewari, P.Silotia.
3. **“Wavevector and frequency dependent dielectric function, dynamic structure factor and the instability of plasma waves in two-component rare hot quantum and classical plasmas”**, PRAMANA-Journal of Physics, Vol. 52 No. 2, 195-217 (1999).  
Co-authors: S.P.Tewari, H.Joshi, J.Sood.
4. **“Static pair correlation function of electrons around an infinite mass positively charged impurity in one and two-component classical and quantum rare hot plasmas”**, Indian J. of Phys. 72B (5), 527-533 (1998).  
Co-authors: S.P.Tewari, J.Sood.
5. **“Anisotropic temperature dependent Rayleigh Mossbauer recoilless fraction in fullerite”**, Physics Letters A 249, 537-540 (1998).  
Co-authors: S.P.Tewari, P.Silotia.
6. **“Effect of cubic and planar collective and localized modes on the specific heat of C<sub>60</sub> fullerite compacts for 0.2K ≤ T ≤ 300K”**, Solid State Communications 107, 129 (1998).

Co-authors: S.P.Tewari, P.Silotia.

7. **“Temperature and density dependent static pair correlation function of electrons around a positron in two-component quantum rare hot plasma”**, Indian Journal of Pure & Applied Physics **36**, 67 (1998).  
Co-authors: S.P.Tewari, J.Sood.
8. **“Positron annihilation in one-component quantum and classical rare hot plasmas”**, Solid State Communications **106**, 397 (1998).  
Co-authors: S.P.Tewari, J.Sood.
9. **“Role of collective and localized modes on the temperature-dependent thermal conductivity in polycrystalline C<sub>60</sub> fullerite compacts”**, Modern Physics Letters B **11**,1031 (1997).  
Co-authors :S.P.Tewari, P.Silotia.
10. **“Reflectivity of low energy photons from mildly degenerate one-component plasma in semiconductors”**, Semiconductor Devices, ed. Krishan Lal (Narosa Publishing House , New Delhi) 298 (1996).  
Co-authors: S.P.Tewari, H. Joshi.
11. **“Reflectivity of low energy photons from wavevector dependent plasma modes in one-component rare hot plasma”**, Indian Journal of Pure & Applied Physics **33**, 675 (1995).  
Co-authors: S.P.Tewari, H. Joshi.
12. **“Wavevector and frequency-dependent collective modes in one-component rare hot quantum and classical plasmas”**, J. Phys:Condens. Matter **7**, 8405 (1995).  
Co-authors: S.P.Tewari, H. Joshi.

## List of Presentations in International Conferences

1. **“Energy dependent total thermal neutron scattering cross-section and transport of a neutron pulse in fullerite at 300K”**, presented at “SPIE conference on Nanotubes and Nanowires”, (3-4 Aug 2003), San Diego, California, USA.  
Co-authors: S.P.Tewari, P.Silotia, Aditya Saxena.
2. **“Effect of acoustic phonons and low energy librational modes on the superconducting transition temperatures in fullerenes”** presented at International Conference on “Spectroscopies on Novel Superconductors” (SNS’97), September 14-18, 1997, Cape Cod, Massachusetts, USA.  
Co-authors: S.P.Tewari, P.Silotia.
3. **“Temperature dependent electric field gradient in highly anisotropic crystals using unfolding technique”** presented at “XIV International Symposium on Nuclear Quadrupole Interactions” (NQI’97), July 20-25, 1997, Pisa, Italy.  
Co-authors: S.P.Tewari, P.Silotia.
4. **“Mossbauer Rayleigh elastic scattering from fullerenes”** presented at “International Conference on the Applications of the Mossbauer Effect” (ICAME’97) Sept’14-20, 1997, Rio de Janeiro, Brazil.  
Co-authors: S.P.Tewari, P.Silotia.
5. **“Dynamics of Polycrystalline disordered C<sub>60</sub>/C<sub>70</sub> fullerite compacts”** presented at “European Research Conference on Dynamical properties of Solids: Lattice Dynamics in ill Ordered Systems”, Sept’ 23-27, 1995, Haro, Spain.  
Co-authors: S.P.Tewari, P.Silotia.

## List of Participation in Workshops

1. Participated in the workshop on “**Novel Physics in Low-Dimensional Electron Systems**”, held at The Institute of Mathematical Sciences, Madras from 7-14 Jan, 1995.
2. Participated in the workshop on “**Emerging Trends in Electronics**”, held at ANDC from June 01-12, 2009.
3. Participated in “**National workshop on Photonics**”, held at DSC in Oct. 2009.
4. Presided as Resource person in the “**INSPIRE –Internship program 2012**” organized by DBC from Oct 1-15, 2012.