


## FACULTY PROFILE PROFORMA

Title (Ms/Mr/Dr/Prof)	DR	FirstName	ARAVIND	LastName	KUMAR	Photograph
Designation	ASSISTANT PROFESSOR					
Department	PHYSICS					
Address (Official)	Flat No-B3 First Floor, Kh. No.-784/3, Galaxy Apartment, Mandir Wali Gali, Main Extended Lal Dora, Sant Nager Burari-110084					
Phone No.	9810080813					
Email	arvindsoniyal@gmail.com					

### Education

Subject	Institution	Year	Details
PHYSICS	C.C.S UNIVERSITY MEERUT	2010	Ph.D
PHYSICS	C.C.S UNIVERSITY MEERUT	2005	M.Phill
PHYSICS	C.C.S UNIVERSITY MEERUT	2002	M.Sc
PHYSICS,CHEMISTRY, MATH	C.C.S UNIVERSITY MEERUT	2000	B.Sc

### CareerProfile

Organisation/Institution	Designation	Duration	Role
S.G.T.B KHALSA COLLEGE, DU	ASSISTANT PROFESSOR	1 YEAR	AD-HOC
KALINDI COLLEGE, DU	ASSISTANT PROFESSOR	13 YEARS	AD-HOC

### Research Interests/Specialization

My research work entitled “optical properties of Hydrogenated Amorphous silicon thin films deposited by plasma enhanced chemical deposition technique” is related with different optical structural and electrical studies of plasma glow discharge semiconductors thin films. The thin films of undoped a-Si:H and doped a-Si:H films, have prepared by plasma glow discharge deposition technique. In optical properties we have determine the optical band gap with the help of absorption spectra and refractive index and exaction coefficient by using the transmission spectra of undoped a-Si:H and both doped (n-type & p-type ) a-Si:H semi conducting thin films. Photoluminescence study observed the recombination process in a-Si:H.. The FT-IR measurement were study the chemically bonding of SiH, SiH<sub>2</sub> and SiH<sub>3</sub> in a-Si:H, and RAMAN spectra study the phase transition in a-Si:H . XRD, SEM, and AFM show the structural properties in a-Si:H. In electrical properties we measured the dark conductivity, photo conductivity with inverse of temperature,

and also show the effect of annealing on all properties of the a-Si:H thin films

**Administrative Assignments / Contribution to corporate life**

Repository Member kalindi College, Physics Department  
 Internship Member Kalindi College , Physics Department  
 College admission committee (Member)  
 College sports committee (member)  
 College NSS committee (member)  
 College sports committee (member)  
 College cultural fest committee (co-convenar)  
 Physics department physcom society committee (member)  
 Physics Department library write off committee (member)

**Teaching Experiences (Subject/Courses taught)**

01 YEARS SGTB KHALSA COLLEGE DU IN 2008-2009  
 12 YEARS KALINDI COLLEGE DU 2009- CURRENT DATE

**Research Guidance**

NILL

**Publication (Peer Reviewed/Indexed Journals)**

Year of Publication	Title	Journal (Name of the journal. Vol Issue ISSN)	Co-Author
2006	Optical, Structural and electrical properties of zinc sulphide vacuum evaporated thin films	Indian Journal of Pure & Applied physics	Co Author
2007	Study of optical constants in $Cd_xZn_{1-x}S$ vacuum evaporated thin films	Indian Journal of Engineering & Material science	Co Author
2008	High pressure growth of nanocrystalline silicon films	Nano Science and Nanotechnology,	Co Author
2012	Study of Wavelength Dependence of Optical Constant for ZnSe Vacuum Evaporated Thin Films	International Journal of Latest Reserch in Science and Technology	Co Author
2013	Structural & Optical Characterization of $Ge_xSe_{80-x}Pb_{20}$ Thin Films Prepared by Thermal Evaporation Technique	International Journal of Soft Computing and Engineering(IJSCE)	Co Author
2013	Effect of Post Deposition Anneling on Hydrogenated Amorphous Silicon Thin Films Grown at High Power by PECVD,	International Journal of Soft Computing and Engineering(IJSCE)	Author
2015	Ellipsometric Analysis $Cd_xSe_{1-x}$ Thin films Prepared by Thermal Evaporation Technique	International Journal of Engineering Research & Management Technology	Co- Author
2016	Spectroscopic Study of Vacuum Evaporated Crystalline Cadmium Zinc Sulphide Thin Films	International Journal of Scientific & Engineering Research	Author
2019	Structural Optical and Raman Characterization of Nano Crystalline Cu Doped Zno Thin Films Deposited by Pulse laser Deposition Technique	Global Journal of Science Frontier Research: A Physics and Space Science	Co-Author

2021	Structural, Thermal and electrical properties of composites electrolytes (1-X) $C_sH_2PO_4/xZrO_2$ ( $0 \leq x \leq 0.4$ ) for fuel cell with advanced electrode.	SN Applied Science A Springer Nature Journal,	Co-Author
2021	Effect of Post Growth Annealing Process on optical properties of CdSe thin films on Si p-type Substrate Deposited by pulsed Laser Deposition Technique	<i>The International Journal of analytical experimental model analysis,</i>	Co Author
2021	The Influence of $TiO_2$ on the proton Conduction and Thermal Stability of $CsH_2PO_4$ Composite Electrolytes.	<i>South African Journal of Chemical Engineering</i>	Co Author
<b>Seminar/Workshop/Conferences Presentation/Organisation</b>			

1. "Electrical Properties of microcrystalline silicon films grown using PECVD" by Jhuma Gope, **Aravind Kumar**, A. Prashar, Sushil Kumar, C.M.S. Rautahn and P.N.Dixit, *2<sup>nd</sup> national conference on condensed matter* during 1-3 Feb, 2007 at Jaipur, India.
2. "Properties of high rate deposited amorphous silicon films using PECVD technique" **Aravind Kumar**, Sushil Kumar, P.N.Dixit and V.K.Rastogi *2<sup>nd</sup> national conference on condensed matter* during 1-3 Feb, 2007 at Jaipur, India.
3. "Estimation of mobility of nano/micro crystalline silicon films using conductivity measurement" by Jhuma Gope, **Aravind Kumar**, P.N.Dixit and C.M.S. Rauthan, *Material Research Society of India*, Feb. 12-14, 2007, New Delhi.
4. "Diamond-like carbon coating with silicon prepared by plasma-assisted chemical vapour deposition technique" by Neha Goyal, Sushil Kumar, **Aravind Kumar**, C.M.S. Rauthan and P.N.Dixit, *Material Research Society of India*, Feb. 12-14, 2007, New Delhi.
5. "Effect of annealing on the properties of hydrogenated amorphous silicon thin films grown at high power by PECVD technique" by **Aravind Kumar**, Jhuma Gope, Sushil Kumar, P.N.Dixit and C.M.S. Rauthan, *Material Research Society of India*, Feb. 12-14, 2007, New Delhi.
6. "Vacuum Thermal Re-crystallization of a-Si:H Thin Films Deposited by PECVD Technique" by **Aravind Kumar** and P.N.Dixit, 96<sup>th</sup> Indian Science Congress, January 3-7, 2009, Shillong, Meghalaya.
7. Optical and Structural Properties of ZnSeTe Thin Films Deposited on glass & ITO Substrate, Pawan Kumar, **Aravind Kumar**, Pravinder Kumar, Kapil Malik, Proceeding of National Conference on Upcoming Trends in Chemical Science UTCS-2013.
8. Investigation of optical and Structural Properties of ZnTe thin Films, Pawan Kumar, **Aravind Kumar**, Pravinder Kumar, Kapil Malik, Proceeding of National Conference on Upcoming Trends in Chemical Science UTCS-2013.
9. Study of Optical Properties of CdSSe Vacuum Evaporated Thin Films Pawan Kumar, **Aravind Kumar**, Kapil Malik, Parvinder, Innovation in science and Technology for Inclusive development, 22-23 March-2014, Organized by department of Chemistry C.C.S University Meerut with ISCA Haridwar Chapter.
10. Effect of Thickness on the Optical and Electrical Properties of Cd<sub>x</sub>Zn<sub>1-x</sub>S Vacuum Evaporated Thin Films. Pawan Kumar, Aravind Kumar & P.N.Dixit, Advancement of Nano Materials and its Applications, Department of Physics D.A.V. College Kanpur (U.P), Feb. 09-11, 2012.
11. Effect of Annealing on the Optical Properties of Hydrogenated Amorphous Silicon Thin Films Grown at High Power by PECVD Technique, Aravind Kumar, Pawan Kumar, Sushil Kumar, P.N. Dixit and V.K. Rastogi, National Conference on Advancement of Nano Materials and its Applications, Department of Physics D.A.V. College Kanpur (U.P), Feb. 15-16, 2011.
12. Study of Optical Properties of CdSSe Vacuum Evaporated Thin Films Pawan Kumar, **Aravind Kumar**, Kapil Malik, Parvinder, ISCA Haridwar Chapter National Conference on Innovation in science and Technology for Inclusive development, Jointly Organized by Indian Science Congress Association, Haridwar Chapter & Department of Chemistry C.C.S University Meerut (U.P) India. 22-23 March-2014,
13. Effect of Thickness on Optical Properties of Se-Te Chalcogenide Semiconductor. Pawan Kumar, Kapil Malik, Parvinder, Anubha Gupta and Aravind Kumar, National Conference on Emerging Trend in Engineering & Science, Faculty of Engineering & Technology Gurukul Kangri University Haridwar Uttarakhand India, November 09-10, 2013.

**National or International Workshop/Conferences/Symposium/ (Attended).**

- 1 National workshop on recent Trends in Atmospheric and Environmental Science, Gurukula Kangri Vishwavidyalaya Hardwar, 4-5 April 2014.
- 2 Workshop & Hand on Training on Synthesis and Characterization of thin films, Department of physics Gurukula Kangri Vishwavidyalaya, Hardwar, 31<sup>st</sup> March- 1<sup>st</sup> April-2015.
- 3 International Conference on Advance Materials (ICAM-2000), Department of Physics Ch.Charan Singh University Meerut, December 26-28, 2000.
- 4 National Conference on Engineering Optics & Spectroscopy, Department of physics, Meerut College Meerut, Ch.Charan Singh University Meerut, April 5-7,2004.
- 5 International Symposium on Advances in Physics, Department of physics, NAS College Meerut, Ch.Charan Singh University Meerut, Feb 25,2006.
- 6 National Symposium on Perspectives in Engineering optics Department of physics, Meerut College Meerut, Ch.Charan Singh University Meerut, April 15,2007,
- 7 National Conference on Semiconductor Material & Technology, Department of physics Gurukula Kangri University Hardwar, 16-18 October-2008.
- 8 National Symposium on Laser and Their Applications, Department of Physics Ch.Charan Singh University Meerut, Sponsored by Asian Journal of Physics, September 12, 2009.
- 9 Indo-Russian Workshop on Nanotechnology and Laser induced Plasma-2009, University of Delhi Delhi, and November 24-26, 2009.
- 10 Second National Workshop on Quantum Mechanics: Theory and Application, Organized by Forum for interdisciplinary Application in Science (FiDAS), Deen Dayal Upadhyaya College, University of Delhi, October 22-23, 2010.
- 11 Workshop on The Physics and Mathematics of the Universe. Gurukula Kangri Vishwavidyalaya Hardwar, March 11-12, 2013.
- 12 National Seminar on Role of Ion Beam in Material Science and Application Programme on Ion Beam Facilities at IUAC New Delhi, Department of Physics Ch.Charan Singh University Meerut, September 20,2013.
- 13 Skill Enhancement by ICT Learning in the Period of online Knowledge Exchange, IQAC Kalindi college, university of Delhi( Technical committee) 9-10/12/2021.
- 14 Exploring Physics With Experts, Department of Physics Kalindi College association with NASI(Organizing Committee) 10/02/2021.

#### **Awards & Distinctions**

First Dr B.R Ambaidkar National Teachers Award -2010

#### **Public Service/ University Service/ Consulting Activity**

Mentoring B.Sc( Physical Science)-III,Sem-VI students of Batch-2020-2021  
Sawththa Abhiyan Nukkad Natak (awareness cleaning)

<b>Professional Societies Memberships</b>
NA
<b>Projects (Major Grants/ Collaborations)</b>
NA
<b>Other Details</b> NCC 'B' Certificate  NSS 240 Hours Work and Two Campus Certificate



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Faculty Name/Signature/ Designation