

Prof. (Dr.) Beer Pal Singh

Ph.D. (Physics), Raman Fellow USA

Visiting Professor, Tokyo University of Science, Tokyo, Japan

Professor & Head, Department of Physics

Proctor & Security Officer

Dy. Director, Centre for International Cooperation

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ACADEMIC PROFILE

Degree/Examination	Board/ Institute/University	Division	Year
PDF, USA (Raman Fellow)	University of Puerto Rico, Mayaguez, PR, USA	--	2014
Ph.D. (Physics)	CCS University, Meerut	--	2002
M.Phil. (Physics)	CCS University, Meerut	I st	1998
M. Sc. (Physics)	CCS University, Meerut	I st	1997
B.Sc. (PCM)	CCS University, Meerut	I st	1995
Sr. Secondary (10+2)	UP Board, Allahabad	II nd	1992
Matriculation (10th)	UP Board, Allahabad	I st	1990

POSITION HELD

Lecturer/Assistant Professor, Jaypee University of Information Technology, Wagnaghat, Solan (HP)	July 2002 - July 2004
Lecturer/Assistant Professor, Ch. Charan Singh University, Meerut (UP)	August 2004 - July 2014
Associate Professor, Ch. Charan Singh University, Meerut (UP)	July 2014 - July 2017
Professor (CAS), Ch. Charan Singh University, Meerut (UP)	July 2017 - December 2017
Professor (Cadre Post), Ch. Charan Singh University, Meerut (UP)	January 2018 - till date

PDF (Visiting Scientist as Raman Fellow)	September 2014 - September 2015
Visiting Professor, Tokyo University of Science, Tokyo, Japan	15-30 November, 2018

TEACHING & RESEARCH EXPERIENCE

- ❖ More than 19 years of Teaching and Research & Development experience in the area of Thin Film Science & Technology and Nanostructured Materials.

ORIENTATION/REFRESHER/TRAINING COURSE ATTENDED

Name of the course	Title of Course	Duration	Sponsoring Agency
Orientation course	79 th four-week Orientation programme	Four Week (2006)	UGC, New Delhi
Refresher course	Four-week refresher course in Physics	Four Week (2010)	UGC, New Delhi
Refresher Course	Three-week refresher course in Basic Sciences (interdisciplinary)	Three Week (2011)	UGC, New Delhi
One week workshop	Workshop on Teaching Methods	One Week (03 March, 2016 to 09 March, 2016)	CPDHE (UGC-HRDC) DU, Delhi
Training Programme	Academic Leadership	08 January, 2018 to 12 January, 2018	Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching, MHRD, Govt. of India
Faculty Workshop	Fulbright Scholar Program	26 May, 2015	University of Puerto Rico, Mayaguez, PR, USA

CURRICULUM VITAE (Prof. Beer Pal Singh)

International Workshop on Space Science	Space Science	18 -21 May, 2020	Space Education and Research Foundation, Ahmedabad and Deptt of Physics, School of Science, RK Univ., Rajkot, India
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NATIONAL/INTERNATIONAL RECOGNITION

UGC Indo-US Raman Post- doctoral Fellowship	Visiting Scientist at University of Puerto Rico, PR, USA in the academic year 2014-15 for 12 months
Member of Advisory Committee	VIGYAN PRAGATI, National Institute of Science Communications and Information Resources (NISCAIR), New Delhi (2015-onwards)
Managing Editor	Asian Journal of Physics, New Delhi
Member of Editorial Board	Annals of Applied Sciences (AAS) (2021- onwards)
Life Member	Thermo Physical Society of India (L-121)
Life Member	Indian Science Congress Association (L40976)
International Research Collaboration	Prof. Carmen Vega, University of Puerto Rico, Mayaguez, PR, USA.

FOREIGN VISITS

Dresden, Germany	Sixth International Conference on Inorganic Materials (IM-2008) held from 28-30 September, 2008.
Beijing, China	18 th International Vacuum Congress (IVC-18), held from 23-27 August 2010.
Paris, France	18 th International Vacuum Congress (IVC-18), held from 23-27 August 2010.
Mayaguez, Puerto Rico	Seminar at Chemistry Department, University of Puerto Rico, Mayaguez on 21 August, 2015.
Boston, USA	Condensed Matter Physics (CMP-2015) held from 22-24 June, 2015.
San Juan, PR	Ana G. Mendez University System (AGMUS-2015) symposium held on 29 August, 2015.
Turabo, PR, USA	Seminar at Turabo University on 15 September, 2015.
Mayaguez, Puerto Rico	Fulbright Scholar Program Faculty Workshop at University of Puerto Rico, on 26 May, 2015
Mayaguez, Puerto Rico	"3er Simposio de la Academia de Investigacion: La Investigacion y la Innovacion como Aceleradores de Nuevas Oportunidades en Puerto Rico" on 15 May, 2015
Tokyo, Japan	Worked as Visiting Professor, Tokyo University of Science, Tokyo, Japan from 15-30 November, 2018.

INTERNATIONAL COLLABORATIONS (MoU)

University/Institution	Collaborator
Central Connecticut state University, New Britain, CT-06050, USA	Dr. Rahul Singhal Department of Physics & Engineering Physics
University of Puerto Rico, Mayaguez, PR-00681-9000 USA	Prof. Carmen A Vega-Olivencia Department of Chemistry
Tokyo University of Science, Tokyo, Japan	Professor Takashiro Akitsu Department of Chemistry Graduate School of Chemistry
Kwangwoon University (KWU), Seoul, South Korea	Prof. Eun Ha Choi Dr. Nagendra K. Kaushik Plasma Bioscience Research Center/ Applied Plasma Medicine Center/
Czech Technical University (CTU), Prague, Czech Republic	Prof. Tom Markvart, Center for Advanced Photovoltaics Dr. Karel Dusek, Department of Electrotechnology Dr. Jakub Holovsky, Head, CAP Technology Team Dr. Rupendra K Sharma, Center for Advanced Photovoltaics
University of Puerto Rico, San Juan, PR-00681-9000 USA	Prof. Ram Katiyar Department of Chemistry, University of Puerto Rico, Mayaguez, PR, USA.

RESEARCH INTERESTS & EXPERTISE

❖ **Thin Film Science & Technology**

- Thermal Vacuum Deposition of Stoichiometric Sulphide Semiconductor Thin Films
- Arsenic doped p-type ZnO thin films
- Al-N Co doped p-type ZnO thin films
- Nonvolatile resistance memory switching in polycrystalline ZnO thin films
- Transparent conducting tin oxide films deposited by thermal evaporation
- Sputtered deposited Y-doped ZnO based Thin Film Transistors
- Sputtered deposited CuO thin Films for Hydrogen sensing
- Sensitization of Vacuum deposited crystalline stoichiometric PbS films by oxygen ion implantation for infra-red sensitivity (in collaboration of IUAC, New Delhi)
- Sputtered deposited MoS₂ thin films for TFT, Gas Sensors and Energy Storage application.

❖ **Nanostructured Materials**

- Synthesis & characterization of sulfide based nanoparticles
- Synthesis & characterization of ZnO nanostructures
- Synthesis & characterization of iron oxide based nanoparticles for electrochemical sensing of drugs molecules
- Doped and undoped CuO nanoparticles for different applications
- TiO₂ and CNT-TiO₂ Nanocomposites for photocatalytic applications
- Iron Oxide nanoparticles for electrochemical sensing of drugs molecules
- Carbonous based CuO Nanocomposites for energy storage applications

POTENTIAL REVIEWER OF VARIOUS JOURNALS

1. Journal of Semiconductors (IOP)
2. Current Journal of Applied Science and Technology
3. IEEE Sensors Journal
4. Journal of Physics D: Applied Physics (IOP)
5. Solid State Sciences (Elsevier)
6. Macromolecular Symposia
7. Indian Journal of Pure & Applied Physics (NISCAIR)
8. Applied Innovative Research (NISCAIR)
9. Asian Journal of Physics
10. Journal of Electronic Materials (Springer)
11. Materials Research Express (IOP)
12. Materials Chemistry and Physics (Elsevier)
13. Vacuum

RESEARCH SUPERVISION/GUIDENCE

❖ M.Phil. Project

- More than 40 students **completed their M.Phil. Project** under my supervision.
- Eight students have **completed Ph.D.** and currently seven are pursuing Ph.D under my supervision

❖ **List of Ph.D. (Physics) thesis supervised**

S.No.	Name of Student	Title of Thesis
1.	Pravin Kumar	Studies of metallic electron cyclotron resonance (ECR) plasma and applications
2.	Amit Kumar	Synthesis and characterization of P-type ZnO thin films by R.F. magnetron sputtering
3.	Sunder Pal Singh	Synthesis and characterization of zinc sulphide (ZnS) nanocrystals in a matrix
4.	Rakesh Kumar	Growth and characterization of vacuum deposited stoichiometric films of sulphide semiconductors
5.	Shweta Vishnoi	Synthesis and characterization of Zinc Oxide (ZnO) nanostructures

6.	Sarita	Optical, electrical and structural properties of $Cd_{1-x}Zn_xSe$ thin films
7.	Jyotshana Gaur	Sensitization of vacuum deposited crystalline PbS films by oxygen ion implantation for photosensitivity
8.	Hitesh Kumar	Synthesis and Characterization of CNT-TiO ₂ Nanocomposites for Photocatalytic Applications

RESEARCH PROJECTS (COMPLETED/ONGOING)

- Research project ongoing entitled "Development of Toxic Gas Sensors using Biosynthesized Semiconducting Metal Oxide Nanostructures" sanctioned by Government of UP under Research & Development" scheme.
Amount: : Rs. 338300/=
Granting Agency : Council of Higher Education, Government of UP, India
Period : Three Years (2021- 2024)
Sanction Letter No. : 80/2021/1543/Sattar-4-2021-4, (28)/2021
Dated : 10/08/2021
- Research project/proposal entitled "Ion Implantation induced modifications of sputtered deposited MoS₂ thin film transistors" going on for beam time experimental facilities at Inter University Accelerator Centre, New Delhi. (Ongoing)
- Research project/proposal entitled "Enhanced Infrared (IR) sensitivity of PbS thin films by ion implantation" successfully completed for beam time experimental facilities at Inter University Accelerator Centre, New Delhi.
- Worked as Team member for FIST-DST(Fund for Improvement of S&T Infrastructure in Higher Educational Institutions) First Phase project of Amount Rs. 1.90 Crore.(Completed)
Granting Agency : Department of Science and Technology (DST), India
Period : Five Years (2013- 2018)
Sanction Letter No. : DST-FIST: SR/FST/PSI-177/2012, 15/11/2012
- Received Project Grant Rs. 22,87,952/- (Rs. Twenty Two lac Eighty Seven Thousand Nine Hundred Fifty Two only) under UGC Indo-Raman Post- Doctoral Fellowship scheme of University Grants Commission (UGC), India.
Granting Agency : University Grants Commission (UGC), India
Period : One Year (2014- 2015)
Sanction Letter No. : No.F.5-48/2014 (IC), 22/08/2014

PRESENT ADMINISTRATIVE RESPONSIBILITIES

- Currently working as Head, Department of Physics, CCS University, Meerut.
- Currently working as Proctor, CCS University, Meerut.

- Currently working as Security Officer, CCS University, Meerut.
- Currently working as Dy. Director, Centre for International Cooperation, CCS University, Meerut.
- Currently working as Coordinator, Pre Ph.D. (Physics) Course work conducted at Department of Physics, CCS University, Meerut.
- Currently working as member of IQAC, CCS University, Meerut.
- Currently working as external member of IQAC, SMP Govt. Girls PG College, Meerut.
- Currently working as Coordinator of International Student's cell.
- Currently working as Coordinator of Cell for differently abled students and SEDGs.
- Currently working as member of Teachers Re-skilling Cell.
- Currently working as Coordinator, Building committee and member of Monitoring Committee, CCS University, Meerut.

PREVIOUS ADMINISTRATIVE RESPONSIBILITIES

- Worked as Head, Department of Physics, CCS University, Meerut.
- Worked Member of Executive Council (EC), CCS University, Meerut.
- Worked as Director, SCRIET, CCSU, Meerut.
- Working as Member of Academic Council (AC), CCS University, Meerut.
- Currently working as member of IQAC, CCS University, Meerut.
- Worked as Assistant DSW, Assistant Proctor, Assistant Warden, Warden, Controller/deputy controller/assistant controller in different university central evaluation.
- Worked as Controller/deputy controller in Scrutiny and UFM committees of university evaluation.
- Worked as Member, Examination Committee, CCS University, Meerut.
- Worked as Coordinator of Pre-Ph.D. Course work, Department of Physics, CCS University, Meerut.
- Worked as Coordinator of Flying Squad in different University examinations.
- Working as Convener of BoS of CCSU, Meerut.
- Working as Convener of RDC of Physics of CCSU, Meerut.
- Working as Member, disciplinary committee.
- Members of some other committee time to time constituted by university
- Worked as a Member of SC/ST Cell
- Worked as Observer of M.Ed& university entrance exams.
- Worked as Observer of B.Ed. state level entrance examination.
- Worked as Observer, UGC, NET exams
- Worked as Member, Admission Committee for Department of Physics, CCSU, Meerut
- Worked as member of Admission Committee of SCRIET, CCSU, Meerut

- Worked as Member, UFM committee
- Worked as Subject Expert in selection committee.
- Working as Member of Anti-Ragging Committee.

SOCIAL RESPONSIBILITIES

- Vice President of NEEV (National Educational Enrichment in Villages) is initiative of IIT Alumni to build possible solution for larger national goals of education. The main aim of NEEV to empower Indians by enriching them with quality education in villages, slums and tribal areas.
- President Bhartiya Prajnan Parishad, Prajna Pravah, Meerut Prant. The social platform to promote the Bharat centric Research.
- Executive member of Board of Advisor of Social magazine “Hastinapur Sandesh” quarterly published by Bhartiya Prajnan Parishad, Prajna Pravah, Meerut.

CO-CURRICULAR AND PROFESSIONAL ACTIVITIES

- Organized a Special Lecture on “**LASER Diffractive Phase Interferometry (DPI) Technology: Rapid Mass-scale Corona infection screening with Light**” as Convener on 07 December, 2021 at Department of Physics, Chaudhary Charan Singh University, Meerut. (Speaker: Dr. Pramod Kumar, Principal Scientist, QuantLase Imaging Laboratory, Abu Dhabi, UAE).
- Organized a Quiz Competition on “COVID Vaccination and Safety” on the occasion of “Tika Utsav” during 11-14, April, 2021 by Department of Physics & 71/1BN UP NCC, CCS University, Meerut in association with NEEV-A Social Educational Initiative of IIT Alumni.
- Organized a Special Lecture Webinar on “**3-D Tetrapod based smart materials for Smart Technologies**” as **Convener** on 28 February, 2021 (National Science Day) by Department of Physics, Chaudhary Charan Singh University, Meerut. (Speaker: Prof. Yogendra Kumar Mishra, University of Southern Denmark, Denmark).
- Organized a Special Lecture Webinar on “**Understanding the Material Limits for Solar Energy Conversion**” as **Convener** on 17 December, 2020 by Department of Physics, Chaudhary Charan Singh University, Meerut. (Speaker: Dr. Jakub Holovsky Czech Technical University, Prague, Czech Republic).
- Organized National Webinar on “Intellectual Property Rights: Rewards to Inventors” as **Convener** on 15 October, 2020 by Department of Physics, Chaudhary Charan Singh University, Meerut. (Speaker: Dr. R.K Sinha, Head, CSIR-Human Resource Development Centre Ghaziabad-UP India)
- Organized Webinar on the theme “Our Hand Our Future” as **Convener** on Global Handwashing Day 15 October, 2020 by Department of Physics, Chaudhary Charan Singh University, Meerut. (Speaker: Dr. Amita, MD, CCP Mumbai)

- Organized National webinar on “**National Education policy 2020: Implementation in Higher Education**” as **Organizing Secretary** on 29 August, 2020 by Chaudhary Charan Singh University, Meerut.
- Organized International webinar on “**Perspectives on Scientific Writing & Soft Skills for Academicians and Professionals**” as **Convener** on 06 August, 2020 by Department of Physics, Chaudhary Charan Singh University, Meerut in association with NEEV- A Social Educational Initiative of IIT Alumni. (Speakers: Dr. Ajeet Kaushik, Department of Chemistry, Florida Polytechnic University, USA and Mr. Shailesh Tewary, Hony Dean, The Libertas University, Croatia)
- Organized two-day International webinar (e-conference) on “**Prospective of Interdisciplinary Research in Science and Technology in the Present Scenario**” as **Convener** during 15-16 May, 2020 by Department of Physics, Chaudhary Charan Singh University, Meerut.
- Organized Essay Writing Competition on the Topic “Role of Artificial Intelligence in Science & Technology”, as **Convener** organized by Department of Physics, Ch. Charan Singh University, Meerut Jointly with American Physical Society on February 28, 2020 (National Science Day Celebrations).
- Chaired Technical Session in National Conference on “Science & Technology: Rural Development” organized by The Indian Science Congress Association: Haridwar Chapter held at Gurukula Kangri Vishwavidyalaya, Haridwar on February 15-16, 2020.
- Organized One week workshop on “Introduction, Synthesis and Characterization of Nanomaterials” as **Organizing Secretary** during December 16-21, 2019 jointly organized by Centre for International Cooperation, Chaudhary Charan Singh University, Meerut and Central Connecticut State University, New Britain, USA at Department of Physics, CCSU, Meerut.
- Organized “Vikram Sarabhai Birth Centenary Lecture Series” as Coordinator for academic year 2019-20 at Department of Physics, CCS University, Meerut.
- Nominated a member of First School Board of School of Physical & Material Sciences of Mahatma Gandhi Central University, Bihar.
- Nominated a member of Academic Council of Gautam Buddha University, Greater Noida.
- Nominated a member of Board of Faculty, Faculty of Science & Technology of GurukulKangri University, Haridwar (UK).
- Nominated External Expert member of Board of Studies (BoS) of Graphic Era (Deemed University), Dehradun (UK).
- Nominated as External Expert member of Board of Studies (BoS) of IFTM University, Moradabad (UP).
- Chaired a session in the 24th International Conference of International Academy of Physical Sciences on Innovations in Physical Sciences held at Chaudhary Charan Singh University, Meerut during August 09-11, 2019.
- Worked as co-convener (Physics) in the 24th International Conference of International Academy of Physical Sciences on Innovations in Physical Sciences held at Chaudhary Charan Singh University, Meerut during August 09-11, 2019.
- Organized Sir “C.V. Raman Memorial Lecture Series” for academic year 2017-18 at Department of Physics, CCS University, Meerut.

- National Advisory Committee in International Conference on "Emerging Materials and Applications" (ICEMA-2017) held on 20-22 February, 2017 at Department of Physics, Allahabad University, Allahabad, (UP) India.
- Nominated a member of National Advisory Committee in International Conference on "Emerging Materials and Applications" (ICEMA-2017) held on 20-22 February, 2017 at Department of Physics, Allahabad University, Allahabad, (UP) India.
- Chair a Technical Session in International Conference on "Emerging Materials and Applications" (ICEMA-2017) on 20-22 February, 2017 held at Department of Physics, Allahabad University, Allahabad, (UP) India.
- Chair a Technical Session XXII in an International Conference on New Scintillations on Materials Horizon (ICNSMH-2016) (21-23 October, 2016) on 23 October, 2016 held at Department of Applied Physics, MJP Rohilkhand University, Bareilly, (UP) India.
- Delivered an Invited Expert Lecture on Nanotechnology on 23 September, 2016 at IIMT College, Meerut.
- Served as Executive Director Conference for "International Conference on Global Initiatives in Applied Sciences and Green Technologies held during 09-11 September, 2016 at SRM University, Delhi NCR Campus, Modinagar, Ghaziabad (UP) India.
- Delivered an Invited Expert Lecture entitled "Semiconducting Thin Films on 16 August, 2016 at DAV College, Muzaffarnagar.
- Served as Additional Director Conference for "International Conference on Innovative Approaches in Applied Sciences and Technologies" (iCiAsT-2016) organized at Bangkok, Thailand from 01-05 February, 2016.
- Organized Ist Alumni meet of Department of Physics, CCS University, Meerut under Golden Jubilee Year 2015-16 celebrations on 18 October, 2015.
- Organized Golden Jubilee Lecture Series (Year 2015-16) at Department of Physics, CCS University, Meerut.
- Delivered a invited talk on "Nanoscience and Nanotechnology" during National Science Week Celebrations -2016 at ABES Institute of Technology, Ghaziabad.
- Delivered an Invited Talk on "Science & Technology" in a seminar for engineering aspirants-2015: I-next Engineering Gateways on 20 Nov., 2015 at Meerut.
- Member of Advisory Committee of National Seminar on "Recent Trends and Development in Nano Materials" held at IIMT Engineering College, Meerut (UP) on 12-13 April, 2013.
- Member of National Organizing Committee of "National Conference on recent Advances in Material Science" organized by Department of Physics, HNB Garhwal University, Srinagar (Garhwal) (UK) held on 26-27 October, 2013.
- Delivered Invited Talks entitled "Introduction and Applications of Nanoscience and Nanotechnology" in "RastriyaMadhyamikShikshaAbhiyan" programme at JilaPriyojnaKaryalya, Meerut held during 15-19 January 2013.
- Acted as Rapporteur in "International Conference on Global IPR System and WTO Issues" held on 16-17 November, 2013 at CCS University, Meerut.
- Delivered an Invited Expert Lecture entitled "Introduction to Nanoscience and Nanotechnology" on 09 October, 2012 at DPBS College, AnoopSahar (Bulandsahar).

- Delivered Invited Talk on the topic “Introduction to Nanoscience& Nanotechnology” at Faculty of Engineering, GurukulaKangriVishvavidhlya, Haridwar (UK) on 14 March, 2012.
- Delivered Invited Talks during the Short term training programme on VLSI Design & Technology at Jabalpur Engineering College, Jabalpur (MP) held during 23rd Nov. to 05th Dec. 2009.

BOOK/CHAPTERS/BOOK REVIEW PUBLISHED

1.	❖ Book- Title: Microscopic Characterization of Nanomaterials, Publisher: SR Scientific Publications, 2016-17 ISBN: 978-9383774-04-3
2.	❖ Book Chapters: 1. Synthesis of Semiconducting Nanoparticles Using Infrared Radiation Assisted Stokes' Law: A Novel Approach by Shrestha Tyagi, Manohar Singh, Beer Pal Singh , Book Chapter (Chaper-7) in New Approaches in Engineering Research Vol. 10 published by B.P International, 65-71(2021)Print ISBN: 978-93-91595-34-0, eBook ISBN: 978-93-91595-42-5 DOI: 10.9734/bpi/naer/v10/10111D 2. Applications of green nanomaterials in coatings ,Yogendra K. Gautam, Kavita Sharma, ShresthaTyagi, Ashwani Kumar, Beer Pal Singh book chapter to be published in book namely “Green Nanomaterials for Industrial Applications” by ELSEVIER (accepted in press) 3. Sustainable nanomaterials for environmental remediation , by authors Kavita Sharma, Shrestha Tyagi, SagarVikal, Arti Devi, Yogendra K. Gautam and Beer Pal Singh book chapter to be published in the book namely <u>Handbook of Green and Sustainable Nanotechnology</u> by Springer. (accepted in press)
3.	4. Application of 2D Materials in Conducting Polymers for High Capacity Batteries by Muhammad RizwanSulaiman, Shrestha Tyagi, Manohar Singh, Beer Pal Singh , Rahul Singhal, Ram K. Gupta book chapter to be published in the book namely Conducting Polymers for Advanced Energy Applications published by CRC press. ISBN: 9780367713355

	<p>❖ Book Review: Recent Trends in Materials Physics and Chemistry, edited by Ujjal Kumar Sur (ISBN: 978-93-85046-32-2) published by Studium Press (India) Pvt. Ltd.</p>
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PATENTS PUBLISHED/GRANTED

Title of the invention:

Method for Designing Multi-Channel Selective Switching and Sensing Device based on Autonomously Tuning of Quint Electromagnetically Induced Transparency.

Application No.: 202111034797A (Indian Patent Office)

Publication Date: 27/08/2021 (Issue No. 35/2021, Page: 72)

Inventors: Ruchi Bhati, Anil Kumar Malik, **Beer Pal Singh**, Updesh Verma

LIST OF RESEARCH PUBLICATIONS

1. Terahertz Radiation by frequency mixing of Hermite cosh Gaussian laser beams in density modulated cold magnetized plasma, Anil K. Malik, Kunwar Pal Singh, Manendra, **Beer Pal Singh**, Sheetal Chaudhary, Updesh Verma, *IEEE Transactions on Plasma Science*, (2021) doi: 10.1109/TPS.2021.3106960.
2. Surface modification of cathode materials for energy storage devices:A review, Manika Chaudhary, Shrestha Tyagi, Ram K. Gupta, **Beer Pal Singh**, Rahul Singhal, *Surface & Coatings Technology*,412 (2021) 127009.
3. Nanostructured metal oxide semiconductor-based sensors for greenhouse gas detection: progress and challenges,Yogendra K. Gautam, Kavita Sharma, Shrestha Tyagi, Anit K. Ambedkar, Manika Chaudhary and **Beer Pal Singh**, *Royal Society Open Science*,8: 201324.
4. Photocatalytic performance of yttrium-doped CNT-ZnO nanoflowers synthesized from hydrothermal method S.K. Sharma, R. Gupta, G. Sharma, K. Vemula, A.R. Koirala, N.K. Kaushik, E.H. Choi, D.Y. Kim, L.P. Purohit, **B.P. Singh**, *Materials Today Chemistry*, 20 (2021) 100452.
5. Defects induced photoluminescence and ellipsometric measurements of reactive sputtered growth MoS₂ nanoworms, Shrestha Tyagi, Ashwani Kumar, Manohar Singh, Amit Sanger, **Beer Pal Singh**, *Optical Materials* 113 (2021) 110848.
6. CNT facilitated interfacial charge transfer of TiO₂nanocomposite for controlling the electron-hole recombination, HiteshKumarSharma, Sanjeev K. Sharma, KoteswararaoVemula, Agni RajKoirala, HemrajM.Yadav, **Beer Pal Singh**, *Solid State Sciences*, 112 (2021) 106492.

7. Sputter-Grown Pd-Capped CuO Thin Films for a Highly Sensitive and Selective Hydrogen Gas Sensor, Prashant Yadav, Ashwani Kumar, Amit Sanger, Yogendra K. Gautam & **Beer Pal Singh**, *Journal of Electronic Materials* 50 (2021) 192–200
8. Sputter deposited crystalline V₂O₅, WO₃ and WO₃/V₂O₅ multi-layers for optical and electrochemical applications, Ravish K. Jain, Atul Khanna, Yogendra K. Gautam, **Beer Pal Singh**, *Applied Surface Science*, 536, (2021) 147804
9. Effect of CNT on the growth and agglomeration of TiO₂ nanoparticles, Hitesh Kumar Sharma, Sanjeev Kumar, Sanjeev K. Sharma, **Beer Pal Singh**, *Indian Journal of Pure & Applied Physics*, 58 (11) (2020) 825-831
10. Quantitative analysis of Fe/Co co-doped ZnO by Rietveld method, Bidyarani Maibam, Saptaka Baruah, **Beer pal Singh**, Sanjeev Kumar, *Indian Journal of Pure & Applied Physics*, 58 (2020), 673-677
11. Electrochemical sensing of hydrogen peroxide based on nano Y-Fe₂O₃ modified glassy carbon electrode, **Beer Pal Singh**, Shrestha Tyagi, Yogendra K, Gautam, Anil K. Malik, Carmen A Vega-Olivencia, *Applied Innovative Research*, Vol. 2, June 2020, pp. 162-166.
12. Enhancement of photosensitivity of thermally evaporated crystalline PbS thin films by low energy oxygen ions implantation, Jyotshana Gaur, Hitesh Kumar Sharma, Shrestha Tyagi, Chetna Tyagi, Pargam Vashishtha, Sanjeev Kumar Sharma, **Beer Pal Singh**, *Nano Express*, 2020, <https://doi.org/10.1088/2632-959X/abb878>
13. Experimental investigation of Co and Fe-Doped CuO nanostructured electrode material for remarkable electrochemical performance, Manika Chaudhary, Milan Singh, Ashwani Kumar, Prachi, Yogendra K. Gautam, Anil K. Malik, Yogesh Kumar, **Beer Pal Singh**, *Ceramics International*, 47(2) 2021, 2094-2106 <https://doi.org/10.1016/j.ceramint.2020.09.042>
14. Bright terahertz (THz) generation by frequency mixing of dichromatic lasers in inhomogeneous cold plasma: Scaling of THz field, Manendra, Kunwar Pal Singh, **Beer Pal Singh**, Anil K Malik, *Physics of Plasmas*, 27(2020)063101; doi: <https://doi.org/10.1063/5.0005643>
15. Investigation of effect of electron temperature on intensity and efficiency of terahertz generated by laser beating in inhomogeneous plasma, Manendra, Kunwar Pal Singh, **Beer Pal Singh** and Anil K Malik, "Physica Scripta (2020) 95, 115007. <https://doi.org/10.1088/1402-4896/abbe51>
16. Effect of Co and Mn doping on the morphological, optical and magnetic properties of CuO nanostructures, **Beer Pal Singh**, Manika Chaudhary, Ashwani Kumar, Amit Kumar Singh, Yogendra K. Gautam, Stuti Rani, Rajan Walia, *Solid State Sciences*, 106 (2020) 106296; doi: <https://doi.org/10.1016/j.solidstatesciences.2020.106296>
17. Structural, optical and thermoelectric properties of Al-doped ZnO thin films prepared by spray pyrolysis, Anit K. Ambedkar, Manohar Singh, Vipin Kumar, Virendra Kumar, **Beer Pal Singh**, Ashwani Kumar, Yogendra K. Gautam, *Surfaces and Interfaces*, 19 (2020) 100504; doi: <https://doi.org/10.1016/j.surfin.2020.100504>
18. Bacterial Compatibility/Toxicity of Biogenic Silica (b-SiO₂) Nanoparticles Synthesized from Biomass Rice Husk Ash, Sanjeev K. Sharma, Ashish R. Sharma, Sudheer D. V. N. Pamidimarri, Jyotshana Gaur, **Beer Pal Singh**, Sankar Sekar, Deuk Young Kim and Sang Soo Lee, *Nanomaterials* 2019, 9, 1440; doi:10.3390/nano9101440.

19. Modeling of intense terahertz wave generation with controlled field distribution, Sheetal Chaudhary, Kunwar Pal Singh, **Beer Pal Singh**, Manendra Lakra, Anil K Malik, *Physics of Plasmas* 26, 000000 (2019); doi: 10.1063/1.5099662
20. Template free synthesis of PbS nanoparticles by sol-gel facile method under IR radiation at room temperature, Ravikant, Jyotshana Gaur, Sanjeev K Sharma & **Beer Pal Singh**, *Applied Innovative Research*, 1, (2019)
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30. Synthesis, characterization, and electrochemical response of iron oxide nanoparticles for sensing acetaminophen, **Beer Pal Singh**, Arun Kumar, Armando P. Duarte, Segundo J. Rojas, Marielys C. Medina, Hector I. Areizaga-Martinez, Carmen A. Vega-Olivencia, and M.S. Tomar, *Materials Research Express* 3 (2016) 106105.
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32. Vacuum deposition of stoichiometric crystalline PbS films: The effect of sulfurizing environment during deposition, **Beer Pal Singh**, Rakesh Kumar, RC Tyagi, Ashwani Kumar, *Materials Research Express*, 2 (2015) 106401.
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44. Optical, electrical and structural investigations on Cd_{1-x}Zn_xSe sintered films for photovoltaic applications, M. Husain, **Beer Pal Singh**, Sushil Kumar, T.P. Sharma, P.J. Sebastain, *Solar energy Materials & Solar Cells* 76 (2003) 399-415.
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51. Influence of Preparation technique on the structural and optical properties of polycrystalline CdTe films, Lokendra Kumar, **Beer Pal Singh**, Gulbir Singh and T.P. Sharma, *Proceedings of International Workshop on Preparation Tech. Imp. Single Crystals*, NPL, New Delhi, Feb. 26-28, 2001.

CONFERENCES/ SEMINARS/ SYMPOSIUM ATTENDED

- Delivered invited lecture as keynote speaker entitled “NEP-2020 in Higher Education: Introduction & Implementation” in One Day National Webinar organized by Shaheed Mangal Pandey Govt. Girls Post Graduate College, Meerut on 20 November, 2021.
- Delivered invited lecture as eminent speaker entitled “Overview of NEP-2020 in Higher Education” during Two Days (13 & 14 October, 2021) National Webinar on “National Education Policy 2020: Problems and Solutions” organized by Govt. Girls Degree College, Kharkhauda, Meerut on 13th October, 2021.
- Delivered lecture as Resource Person on the topic "Nanoscience & Nanotechnology: Tools & Techniques for Characterization of Nanomaterials" during five days Online faculty Development Program (e-FDP) on “Theoretical and Practical Aspects in Applied Physics” (TAPAAP-2021) from 24th September-28th September, 2021 organized by Department of Applied Science, Radha Govind Group of Institutions Meerut (UP).
- Delivered invited lecture as key note speaker entitled “Successful implementation of NEP-2020 in the colleges of Muzaffarnagar District” in One Day Workshop on “National Education Policy 2020” organized by Training & Placement Cell, Ch. Chhotu Ram (PG) College, Muzaffarnagar on 21st September, 2021.
- Delivered invited talk entitled “Metal oxide nanomaterials for sensing and energy storage devices” in “International Conference on Recent Advances in Basic and Applied Sciences ICRAAS-2021” organized by Faculty of Sciences, Baba Mastnath University, Rohtak, Haryana on 28 August, 2021.
- Delivered online oral presentation entitled “Phase controlled synthesis of iron oxide nanoparticles for electrochemical sensing of acetaminophen” in “The 4th International

Conference on Material Strength and Applied Mechanics” MSAM-2021, Macau, China on 19 August, 2021.

- Delivered invited lecture as key note speaker entitled “Implementation of NEP-2020 in Higher Education” in One Day Workshop on “National Education Policy 2020: Implementation in Higher Education” organized by IQAC, SSV College, Hapur on 29th June, 2021.
- Delivered invited lecture entitled “Implementation of NEP-2020 with special reference to Differently Abled Students & SEDGs” in two days’ workshop on “Implementation of NEP-2020 in the session 2021-22” organized by RG (PG) College, Meerut on 25th June, 2021.
- Delivered key note address in National Webinar (E-Conference) on "Planning for Higher Education & Research-Amid & Post Covid-19" organized by Teerthanker K.R.D. (PG) College, Gurugram (Haryana) during June, 3-4, 2021.
- Delivered invited Talk entitled “Implementation of NEP-2020: local issues and challenges” during National Webinar on “Future of Legal Education under NEP-2020” organized by Sardar Patel Subharti Institute of law, Swami Vivekanand Subharti University, Meerut on 25th May, 2021.
- Delivered invited talk on “Nanoscience & Nanotechnology” in special lecture seminar series organized by Department of Physics, NAS College, Meerut on 23rd March, 2021.
- Delivered invited lecture on NEP-2020 in a conference on “Implementation of NEP-2020: Challenges & Suggestions” organized by NITI Ayog & Bhartoya Shikshan Mandal in Collaboration with Department of Education, NAS, College, Meerut on 20th March, 2021.
- Delivered invited lecture entitled “Nanomaterials for sensing and energy storage devices” in One week online Workshop on "Quality Engineering and Technological Advances in Materials and Devices" organized by Department of Physics, Sharda University, Noida during 8th March to 12th March 2021.
- Delivered an Invited Lecture entitled “Applications of metal oxide nanostructures in display electronics, sensing and energy storage devices” in the International Conference on Diverse Emerging materials and their Applications (ICDEMA-2021) organized by Department of Physics, University of Lucknow, Lucknow during 14-15 March, 2021.
- Delivered an Invited Talk entitled “Metal Oxide Nanomaterials: Synthesis, Characterization and State-of-Arts Applications” in Continuing Education Programme (CEP) on “New Frontiers in Nanomaterials Research” organized by INMAS, DRDO, New Delhi during 17-19 Feb 2021.
- Delivered invited keynote talk entitled “Applied Nanotechnology in Sports Training and Coaching” in “International Webinar VII on Sports Engineering” organized by Sports Engineering Association (SEA), India on 18th December, 2020.
- Delivered Two lectures as Resource Person on the topic: Lecture-01 “Materials Science in 21st Century: state-of arts applications of metal oxide nanomaterials” and Lecture-02 “Intellectual Property Rights” at online Refresher Course in Physics conducted by the UGC-Human Resource Development Centre, University of Allahabad on November 21, 2020 and December 02, 2020.
- Delivered an Invited Talk in the One Week Short Term Course on “Recent Trends in Advanced Materials and Devices” organized by Department of Physics and Department of

Electronics & Communication Engineering, Dr B R Ambedkar National Institute of Technology Jalandhar held during September 21, 2020 to September 25, 2020.

- Delivered invited lecture as keynote speaker on “National Education Policy 2020” in National Webinar on “National Education Policy 2020: Implementation in Higher Education” organized by NEEV-a Social educational Initiative of IIT Alumni in association with Rudra Institute of Technology, Mawana, Meerut on 20th September, 2020.
- Delivered Expert Invited talk on NEP-2020 in National webinar on “National Education Policy-2020: Suggestions for Judicious use of Online and Digital Education and Development of World-Class Digital Infrastructure” organized by Vijay Singh Pathik Govt. PG College, Kairana, Shamli, UP on 27 August, 2020.
- Delivered an Invited Talk entitled “Intellectual Property Rights” in the One Week Faculty Development Program (FDP) on Development of E-Contents, Organization of E-Meetings and Online Classes during 24-29 August, 2020 organized by IQAC, Shri Murli Manohar Town PG College, Ballia, UP.
- Delivered an invited talk on "Metal Oxide Nanostructures: Leading edge Applications in Devices" in International Webinar (E-Conference) on "Recent Developments in Materials Science" organized by Department of Physics, St. Andrew's College, Gorakhpur during June 02-03, 2020
- Delivered key note address in National Webinar on topic “Pandemic COVID - 19 Awareness” on 24th May 2020 organized by SHRI GULAB SINGH RAJKIYA MAHAVIDYALAYA, CHAKRATA, DEHRADUN In association with NEEV-a social educational Initiative of IIT Alumni
- Delivered an invited talk on "Materials Science in 21st Century: Smart Applications of Nanomaterials" in International E-Conference on "Emerging Advances in Mathematical and Physical Sciences (IECEAMPS)" during June 28-30, 2020 jointly organized by Department of Mathematics and Physics Hindu College, Moradabad (MJP Rohilkhand University, Bareilly UP, India.)
- Delivered an invited lecture titled “State of the Arts Device Applications of Metal Oxide Nanostructures” in National Conference on “Science & Technology: Rural Development” organized by The Indian Science Congress Association: Haridwar Chapter held at Gurukula Kangri Vishwavidyalaya, Haridwar on February 15-16, 2020.
- Delivered an invited lecture titled “Nanoscience and Nanotechnology: Interdisciplinary Approach and Applications” in International Conference on Interdisciplinary Research for Sustainable Development Innovation and Opportunities held at Vardhman College, Bijnor during February 14-16, 2020.
- Worked as mentor and delivered an invited lecture in "Inspire Internship Science Camp-2020" sponsored by DST, Govt. of India on 22 January, 2020 at Meerut Institute of Technology, Meerut (UP).
- Delivered an invited lecture titled “Introduction to Nanoscience & Nanotechnology: Material Science of 21st Century” in One week workshop on “Introduction, Synthesis and Characterization of Nanomaterials” held at Chaudhary Charan Singh University, Meerut during December 16-21, 2019.
- Delivered an invited lecture titled "Phase controlled synthesis of iron oxide nanoparticles for electrochemical sensing of drug molecules" in the 24th International Conference of

International Academy of physical Sciences on Innovations in Physical Sciences held at Chaudhary Charan Singh University, Meerut during August 09-11, 2019.

- Delivered an invited lecture entitled "Magnetic nanoparticles: Synthesis, characterization and electrochemical sensing applications" at Kagurazaka campus, Tokyo University of Science, Tokyo, Japan on 21 November, 2018.
- Delivered an invited lecture entitled "Applications of nanoparticles in sensing of drug molecules" in National Conference on Nanoscience & Technologies in Digital India (NANOTCON-18) held during April 27-28, 2018 at Shobhit Deemed University, Meerut.
- Worked as mentor and delivered an invited lecture in "Inspire Internship Science Camp" sponsored by DST, Govt. of India on 13 January, 2017 at SRM University, NCR campus, Modinagar (UP).
- Delivered an invited talk entitled "Nanotechnology and sensing of drugs molecules" in a National Seminar on Nano Science and Nano Biotechnology on 25 February, 2017 held at Department of Physics, D. A-V. College, Kanpur, (UP) India.
- Delivered an invited talk entitled "Synthesis and Characterization of iron oxide nanoparticles for electrochemical sensing, in International Conference on "Emerging Materials and Applications, (ICEMA-2017) on 20-22 February, 2017 held at Department of Physics, Allahabad University, Allahabad, (UP) India.
- Worked as mentor and delivered an invited lecture in "5th Inspire Internship Science Camp- 2016" sponsored by DST, Govt. of India on 22 December, 2016 at Indraprastha Institute of Technology, Sahabajpur, Amroha (UP).
- Delivered an invited talk entitled "Electrochemical activities of iron oxide nanoparticles for sensing acetaminophen" in an International Conference on New Scintillations on Materials Horizon (ICNSMH-2016) (21-23 October, 2016) on 23 October, 2016 held at Department of Applied Physics, MJP Rohilkhand University, Bareilly, (UP) India.
- Delivered an invited talk entitled "Sensing of acetaminophen on electrochemically active iron oxide nanoparticles modified electrode" in a UGC sponsored National Conference on Modern Trends in Analytical & Environmental Physics" (17-18 October, 2016) on 18 October, 2016 at Hindu College, Moradabad (UP) India.
- Delivered an invited lead talk entitled "Nano γ -Fe₂O₃ modified glassy carbon electrode based electrochemical sensing of drugs molecules" in an International Conference on Global Initiatives in Applied Sciences and Green Technologies (09-11 September, 2016) on 10 September, 2016 at SRM University, Delhi NCR Campus, Modinagar, Ghaziabad (UP) India.
- Attended National Conference on Thermo-physical Properties held from 14-16 December, 2015 at MNIT, Jaipur, Rajasthan and presented a research paper entitled "Effect of Sulfurizing Environment on the Growth and Properties of Vacuum Evaporated Sulfide films".
- Delivered an invited talk entitled "Iron oxide nanoparticles: Electrochemical activity for sensing drugs" in a National Seminar on "Challenges in Plant Sciences: Now and Then" on 08 December, 2015 at CCS University, Meerut.
- Delivered an invited talk in Ana G. Mendez University System Student Research Development conference entitled "Electrocatalytic ability of Iron oxides nanoparticles for sensing acetaminophen" on 15 September, 2015 at Turabo University, Turabo, PR, USA.

- Participated in Ana G. Mendez University System (AGMUS-2015) symposium held on 29 August, 2015 at **San Juan, PR, USA** and presented a special talk on "Facile synthesis, characterization and electrochemical response of iron oxide nanoparticles".
- Delivered Seminar entitled "Iron oxide nanoparticles: facile synthesis, characterization and their use for electrochemical sensing of acetaminophen" in Chemistry Department, **University of Puerto Rico, Mayaguez** on 21 August, 2015.
- Attended Condensed Matter Physics (CMP-2015) held from 22-24 June, 2015 at **Boston, USA** and presented a invited research paper entitled "Impact of ambient H₂S atmosphere on the growth and properties of vacuum evaporated sulfide semiconductors thin films for device".
- Participated in Fulbright Scholar Program Faculty Workshop, organized by **University of Puerto Rico, Mayaguez** on 26 May, 2015.
- Participated in "3er Simposio de la Academia de Investigacion: La Investigacion y la Innovacion como Aceleradores de Nuevas Oportunidades en Puerto Rico" organized by **University of Puerto Rico, Mayaguez** on 15 May, 2015.
- Attended 19th *International Vacuum Congress (IVC-19)*, held from 09-13 September 2013 at **Paris, France** and presented a research paper entitled "Studies on Transparent conducting Tin oxide (SnO₂) films deposited by thermal evaporation".
- Attended 18th *International Vacuum Congress (IVC-18)*, held from 23-27 August 2010 at **Beijing, China** and presented a research paper entitled "Vacuum deposition of stoichiometric thin films of II-VI sulphide semiconductors".
- Active participation in *National Symposium on Lasers and Their Application* held on September 12, 2009 at Department of Physics, CCS, University, Meerut and presented research paper entitled "Synthesis & characterization of Laser Pulse Deposited Thin Films of CdPbS".
- Attended and presented a research paper in *National Conference on Recent Advances in Condensed Matter Physics (RACMP-09)* from 23-24 May, 2009 at National Institute of Technology, Hamirpur (HP).
- Attended *Sixth International Conference on Inorganic Materials (IM-2008)* held from 28-30 September, 2008 at **Dresden, Germany** and presented a research paper entitled "Growth and Characterization of Vacuum Evaporated Thin Films of Cadmium Sulphide".
- Attended a *National Symposium on "Semiconductor Materials and Recent Technologies (SMART- 13-14 October, 2006)* held at BMAS Engineering College Agra and presented a research paper entitled "Optical properties of Lead sulphide (PbS) pellets".
- Attended an *International Conference on Nano Science & Technology (ICONSAT 2006)* held from March 16-18, 2006 at India Habitat Centre, Lodhi Road, New Delhi.
- Attended an IMS Conference-2006 held from February 17-18, 2006 at *Electronic Science Department, Kurukshetra University, Kurukshetra, Haryana*.
- Active participation in *National Conference on Engineering Optics & Spectroscopy* held from April 5-7, 2004 at Department of Physics, CCS University, Meerut, and presented a research paper.
- Active participation in *National Conference on Lasers & Spectroscopy* held from February 25-28, 2003 at Department of Physics, Meerut College Meerut, India. Presented research paper entitled "Optical characterization of vacuum evaporated ZnTe thin films".

- Attended a National Seminar cum Workshop on “Surface Modifications and Characterizations by Energetic Ion Beams” held from 23-24 Nov.2001 at *Department of Physics, University of Rajasthan, Jaipur*.
- Active participation in *International Conference on Advance Materials* held from December 26-28, 2000 at Department of Physics, C.C.S. University Meerut, India. Presented research paper entitled “*II-VI Semiconductor sintered films as smart materials for solid state devices*”.
- Attended *National Conference on Materials and Semiconductor Technologies in Electronic Research* held from November 8-10, 2000 at Department of Physics, GBPUAT, and Pantnagar. Presented research paper entitled “*Optical properties of Cadmium selenide thin films*”.
- Delivered Invited Talks entitled “Vacuum deposition of stoichiometric sulphide semiconductors thin films for device applications” during the National Conference on Perspectives of Physics in Multi-disciplinary Research” held at Department of Physics, University of Rajasthan, Jaipur on 13 March 2014.
- Delivered Invited Talks entitled “Electron microscopy: A versatile tool for nano-characterization” during the National Seminar on “Recent Trends and Development in Nano Materials” held at IIMT Engineering College, Meerut (UP) on 12 April 2013.
- Delivered Invited Talks entitled “Effect of Annealing on Properties of Transparent Conductive Oxides (TCO) Thin Films” during the 7th National Conference on Thermophysical Properties (NCTP-2013) held at CSJM University, Kanpur (UP) during October 17-19, 2013.
- Delivered Invited Talks entitled “Thin Films and Ion Implantation” during the National Seminar on “Role of Ion Beam in Materials Science & Acquaintance Programme on Ion Beam Facilities at IUAC New Delhi” held at CCS University, Meerut (UP) on 20 September, 2013.
- Delivered Invited Talks entitled “Thin Film Science & Technology: Studies on II-VI compound Semiconductors” during the National Conference on Progress in Electronics and Allied Sciences (PEAS) held at Faculty of Engineering, GKV, Haridwar (UK) on 04, Nov.2012.
- Delivered Invited Talks entitled “Synthesis and characterization of vacuum evaporated sulphide semiconductor thin films for solid-state device fabrications” in the International Conference on Re-newable Energy at Eternal University, Baru Sahib (HP) during 5-6 May, 2012.
- Delivered Invited Talks entitled “Electron Microscopy as a means for Nano-characterization” during the National Workshop on advancement of Nano Materials and its Applications (sponsored by UGC, New Delhi) at Department of Physics, D.A-V. College, Kanpur (UP) on 11 Feb. 2012.

PERSONAL DETAILS

FATHER'S NAME : Late SH. KARAN SINGH
MOTHER'S NAME : Smt. BALESHRI
DATE OF BIRTH : 20th JAN 1975
PERMANENT ADDRESS : VILLAGE: GHATOULI, POST OFFICE: DUTT NAGAR,
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GENDER : MALE
MARITAL STATUS: MARRIED
NATIONALITY: INDIAN
MOTHER TONGUE: HINDI

I hereby declare that all the details in this resume are true, complete and correct to the best of my knowledge and belief.

Date: .../.../2021

Place: MEERUT (UP)



[PROF. BEER PAL SINGH]