Faculty Details proforma for DU Web-site

(PLEASE FILL THIS IN AND Email it to websiteDU@du.ac.in and cc: director@ducc.du.ac.in

Title	Dr	First Name	PANDIAN	Last Name	SENTHIL KUMAR	Photograph
Designation		ASSISTANT PROFESSOR				
Address		DEPARTMENT OF PHYSICS & ASTROPHYSICS, UNIVERSITY OF DELHI, NORTH CAMPUS, DELHI 110007				
Phone No	Office					
	Residence	A-6, TEACHERS' RESIDENTIAL COMPLEX, TYPE II, MUKHERJEE NAGAR, DELHI 110009				
	Mobile					
Email		pskumardu@gmail.com; pskumar@physics.du.ac.in				
Web-Page		physics.du.ac.in				

Educational Qualifications

Degree		Year
PhD	Thesis topic: **IONIC AND MESOSCOPIC ASPECTS OF CATION DOPED SILVER IODIDE**	**2003**

Career Profile

University of Delhi, INDIA

Assistant Professor — 2008 - Present

Universidade de Vigo, Spain

Post doctoral Research in Nanotechnology — 2006 - 2007

Chung Yuan Christian University, Taiwan

Post doctoral Research in NanoBioengineering — 2005

National Chemical Laboratory, Pune, INDIA

Post doctoral Research in the field of Nanotechnology — 2003 - 2005

University of Hyderabad, Hyderabad, INDIA

Ph.D. Thesis in Experimental Condensed Matter Physics — February 2003

Administrative Assignments

Member - Examination Committee (2017 onwards)

Member - Anti Ragging Committee (2017 onwards)

Member - Renovation Committee (2018)

Areas of Interest / Specialization

NANOTECHNOLOGY - METAL AND SEMICONDUCTOR NANOCRYSTALS, MICROSCOPIC AND SPECTROSCOPIC ASPECTS OF ADVANCED FUNCTIONAL MATERIALS

Subjects Taught

2018-19	*Quantum Mechanics II*
2018-19	*Nanoscience Laboratory (Final)*
2017-18	*Advanced Solid State Theory II*
2017-18	*Nanoscience Laboratory (Final)*
2016-17	*Advanced Solid State Theory II*
2016-17	*Nanoscience Laboratory (Final)*
2015-16	*Advanced Solid State Theory II*
2015-16	*Solid State Physics Laboratory (Previous)*
2014-15	*Laser & Spectroscopy II (Theory)*
2014-15	*Solid State Physics Laboratory (Previous)*
2013-14	*Laser & Spectroscopy II (Theory)*
2013-14	*Solid State Physics Laboratory (Previous)*
2013-14	*Quantum Mechanics I*
2012-13	*Quantum Mechanics I*
2012-13	*Solid State Physics Laboratory (Previous)*
2011-12	*Quantum Mechanics I*
2011-12	*Solid State Physics Laboratory (Previous)*
2010-11	*Quantum Mechanics I*
2010-11	*Waves & Optics Laboratory (Previous)*

Time table of the subjects taught during the current semester

S.No.	Subject	Days	Time	Classroom
1	**Nanoscience Laboratory**	**Thursday and Friday**	**1.30pm to 5.30pm**	**Final Nanoscience Laboratory**
2	**Quantum Mechanics II**	**Tuesday to Friday**	**2pm to 3pm**	**Lecture Hall H, Department of Physics & Astrophysics**

Research Guidance

Two students have submitted their PhD thesis
Currently, supervising 3 PhD students

Publications Profile

Books / Monographs

Year of Publication	Title	Publisher
2018	***Gold Nanoparticles: Plasmonic Aspects and Applications,***	**Empyreal Publishing House, Assam, INDIA**
2016	**Ionic and Mesoscopic Aspects of Cation Stabilized Silver Iodide**	**LAP Lambert Academic Publishing Germany**

In Indexed/ Peer Reviewed Journals

Year of Publication	Title	Journal	Co-Authors
2019	***Enhanced Catalytic and SERS performance of Shape/Size controlled Anisotropic Gold Nanostructures***	***New J. Chem. 43 (2019) 3835-3847***	Kamalesh Nehra, Moram Sree Satya Bharati and Venugopal Rao Soma
2018	***Chloride Ion Refined Galvanic Replacement: Boosting Monodispersity of Au-Ag Hollow Nanoparticles and Their Enhanced Applications,***	***Cuur. Appl. Phys. 18 (2018) 1158-1170***	Kamalesh Nehra
2018	***Monomer functionalized silica coated with Ag nanoparticles for enhanced SERS hotspots,***	***Appl. Surf. Sci. 440 (2018) 133-143***	M. Boazbou Newmai, Manoj Verma
2017	***Synergistic effect of Au-Ag nano-alloying: intense SEIRA and enhanced catalysis***	***Dalton TransR. 46*** **(2017)** *9664-9677*	Manoj Verma, M. Boazbou Newmai
2016	***Differential role of PVP on the synthesis of plasmonic gold nanostructures and their Catalytic and SERS properties***	***RSC Adv. 6*** **(2016)** 80342-80353	Manoj Verma, Abhitosh Kedia, M. Boazbou Newmai
2015	***Tweaking Anisotropic Gold Nanostars: Covariant control of Polymer-solvent mixture complex***	***RSC Adv. 5*** **(2015)** 5205-5212	Abhitosh Kedia, Harsh Kumar
2014	***A simple one pot synthesis of cubic Cu_5FeS_4***	***RSC Adv. 4*** **(2014)** 52633-52636	Prashant Kumar, Meenakshi Gusain, Sitaraman Uma and Rajamani Nagarajan
2014	***Halide ion induced Tuning and Self-organization of Gold Nanostars***	***RSC Adv. 4*** **(2014)** 4784-4790	Abhitosh Kedia
2013	***Local Electron Beam Excitation and Substrate Effect on the Plasmonic Response of Single Gold Nanostars***	***Nanotech. 24 (2013)*** 405704 (9 pp.)	Pabitra Das, Abhitosh Kedia, Nicolas Large and Tapas Kumar Chini
2012	***Controlled Reshaping and Plasmon Tuning Mechanism of Gold Nanostars***	***J. Mat. Chem. C 1 (2013)*** 4540-4549	Abhitosh Kedia
2012	***Solvent-Adaptable poly(vinylpyrrolidone) Binding Induced Anisotropic Shape Control of Gold Nanostructures***	***J. Phys. Chem. C 116*** **(2012)** 23721-23728	Abhitosh Kedia
2012	***Precursor-Driven Nucleation and Growth of Gold Nanostars***	***J. Phys. Chem. C 116*** **(2012)** 1679-1686	Abhitosh Kedia
2010	***Room temperature optical absorption and intrinsic***	***Chemical Physics***	Neetu Tyagi and

	photoluminescence in $KZnF_3$	***Letters, 494 (2010)*** *284-286*	R. Nagarajan
2008	***High yield synthesis and optical response of gold nanostars***	***Nanotechnology, 19*** (2008) 015606 (6pp)	Isabel Pastoriza Santos, Benito Rodríguez González, F. Javier García de Abajo and Luis M. Liz Marzán
2006	***High temperature XRD studies of nanoscale AgI-CuI solid solutions***	***Journal of Physics and Chemistry of Solids, 67 (2006)*** 1809 - 1816	A.K. Tyagi and C.S. Sunandana
2006	***Search for a novel zero thermal expansion material: dilatometry of the AgI-CuI system***	***Journal of Materials Science,*** *41* (2006) 3861 - 3865	N.S. Kini, A.M. Umarji and C.S. Sunandana
2005	***Synthesis of CdS and alloyed CdMnS nanocrystals using aqueous foams***	***Journal of Nanoscience and Nanotechnology,*** *5* (2005) 2144 - 2154	Manasi Kasture, Usha Raghavan, Renu Pasricha and Murali Sastry
2004	***Free standing gold nanoparticle membrane by the spontaneous reduction of aqueous chloroaurate ions by oxyethylene linkage bearing diamine at a liquid liquid interface***	***Advanced Materials,*** *16* (2004) 966 - 971	PR. Selvakannan, Arvind S. More, Rahul D. Shingte, Prakash P. Wadgaonkar and Murali Sastry
2004	***Highly versatile free standing nanogold membranes as scaffolds for the growth of calcium carbonate crystals***	***Chemistry of Materials,*** *16* (2004) 988 - 993	Debabrata Rautaray, Prakash P. Wadgaonkar and Murali Sastry
2004	***One pot, spontaneous and simultaneous synthesis of gold nanoparticles in aqueous and nonpolar organic solvents using a diamine containing oxyethylene linkage***	***Langmuir,*** *20* (2004) 295 – 298	PR. Selvakannan, Arvind S. More, Rahul D. Shingte, Prakash P. Wadgaonkar and Murali Sastry
2004	***Theoretical approaches to superionic conductivity***	***Bulletin of Materials Science,*** *27* (2004) 1 - 17	C.S. Sunandana

Conference Proceedings

Manoj Verma, Annu Dahiya, Kathy and **P. Senthil Kumar**, *Metal precursor induced shape*

controlled synthesis of gold nanostructures, **AIP Conf. Proc.,** 2018, 1953, 030225. . (**ISSN: 0094-243X**)

Kamalesh Nehra and **P. Senthil Kumar***, Chloride Ion Induced formation of size/shape tunable hollow gold nanostructures,* **Adv. Sci. Lett. 2018, 24**, 844-846. (**ISSN: 1936-6612**)

Manoj Verma, Kamalesh Nehra, **P. Senthil Kumar**, *Plasmonic Oligomers: The Role of polymer-solvent interactions,* **Adv. Sci. Lett.** 2016, 22, 3860-3862. (**ISSN: 1936-6612**)

Manoj Verma, Abhitosh Kedia, **P. Senthil Kumar**, *Gold-Copper alloy "nano-dumplings" with tunable compositions and plasmonic properties,* **AIP Conf. Proc.** 2016, 1728, 020325. (**ISSN: 0094-243X**)

Kamalesh Nehra, Manoj Verma & **P. Senthil Kumar**, *Gold Nucleation engineered growth/formation of core-shell and hollow metal nanostructures,* **AIP Conf. Proc.** 2016, 1728, 020328. (**ISSN: 0094-243X**)

Manoj Verma, Abhitosh Kedia, **P. Senthil Kumar**, *Bromide Ion Induced Formation of PVP-Capped Anisotropic Gold Nanoplates/Nanotriangles,* **AIP Conf. Proc**. 2014, 1591, 549-551. (**ISSN: 0094-243X**)

M. Boazbou Newmai, Abhitosh Kedia, **P. Senthil Kumar**, *NVP Encapsulated Gold Nanoclusters by In Situ Polymerization of Monomer,* **AIP Conf. Proc**. 2014, 1591, 600-602. (**ISSN: 0094-243X**)

Abhitosh Kedia, **P. Senthil Kumar**, *Gold Nanostars Reshaping and Plasmon Tuning Mechanism*, **AIP Conf. Proc**. 2013, 1512, 232-233. (**ISSN: 0094-243X**)

Abhitosh Kedia, **P. Senthil Kumar**, *Solvent Induced Kinetic Growth of Shape Controlled Gold Nanostructures*, **AIP Conf. Proc**. 2011**,** 1349, 321-322. (**ISSN: 0094-243X**)

Publications in the Last one year

Kamalesh Nehra, **Senthil Kumar Pandian***,* Moram Sree Satya Bharati and Venugopal Rao Soma*, Enhanced Catalytic and SERS performance of Shape/Size controlled Anisotropic Gold Nanostructures,* ***New J. Chem.*****, 2019,** 43, 3835-3847. (**Impact Factor = 3.201**)

Kamalesh Nehra and **P. Senthil Kumar***, Chloride Ion Refined Galvanic Replacement: Boosting Monodispersity of Au-Ag Hollow Nanoparticles and Their Enhanced Applications,* ***Curr. Appl. Phys.*****, 2018,** 18, 1158-1170. (**Impact Factor = 2.058**)

M. Boazbou Newmai, Manoj Verma and **P. Senthil Kumar**, *Monomer functionalized silica coated with Ag nanoparticles for enhanced SERS hotspots*, ***Appl. Surf. Sci.*, 2018,** 440, 133-143. (**Impact Factor = 4.439**)

Conference Organization/ Presentations (in the last three years)

M. Boazbou Newmai and **P. Senthil Kumar**, *Charge Transfer Interactions in Oligomer coated Gold Nanoclusters* – **Poster** presented at 60th DAE Solid State Physics Symposium (**DAE-SSPS-2015**) at Amity University UP, Noida, Uttar Pradesh during December 21-25, 2015.

Manoj Verma, Kamalesh Nehra and **P. Senthil Kumar**, *Plasmonic Oligomers: The Role of Polymer-Solvent Interactions* – **Oral** presented at 8th National Conference on Thermophysical Properties (**NCTP-2015**) at MNIT, Jaipur, during 14-16 December 2015.

Manoj Verma, Abhitosh Kedia and **P. Senthil Kumar**, *Gold-Copper Alloy "Nano-Dumplings" with Tunable Compositions and Plasmonic properties* - **Poster** presented at International Conference on Condensed Matter & Applied Physics (ICC-2015) at Govt. Engineering College Bikaner, Rajasthan, during October 30-31, 2015.

Kamalesh Nehra, Manoj Verma and **P. Senthil Kumar**, *Nucleation Engineered Growth / Formation of Core-Shell and Hollow metal nanostructures* - **Poster** presented at International Conference on Condensed Matter & Applied Physics (**ICC-2015**) at Govt. Engineering College Bikaner, Rajasthan, during October 30-31, 2015.

Research Projects (Major Grants/Research Collaboration)

Supported by the Scheme to Strengthen R & D Doctoral Research Program at the University of Delhi from 2009 onwards with an annual grant of Rs. 2.5 lakhs.

Research collaboration with Materials Chemistry Group, Department of Chemistry, University of Delhi

Research collaboration with Surface Physics Division, Saha Institute of Nuclear Physics, Kolkata, INDIA

Awards and Distinctions

MRSI best paper award (2014)

Best Poster award at ICYRAM 2012 Singapore

Our Nanotechnology paper (2008) is one of the most cited/referenced papers

Association With Professional Bodies

Included in Marquis Who's Who in the world 2014 (31st edition)

Other Activities

Invited Talks

P. Senthil Kumar, *The Magic of Small Things: A Journey with Surface Science and Spectroscopy –*

Invited talks at the National Seminar on Contemporary Physics, held at Madura College, Madurai, Tamil Nadu, INDIA, December 15, 2017.

P. Senthil Kumar, *The Science and Engineering of Nanocrystals* – ***Invited talk*** at the National Seminar on Nanoscience and Technology, held at N.M.S.S.V.N. College, Madurai, Tamil Nadu, INDIA, February 19, 2016.

P. Senthil Kumar, *Science at the Nanoscale* – ***Invited talk*** at the Orientation program on Nanoscience, held at Swami Shradhaanand University of Delhi, INDIA, March 25, 2015.

P. Senthil Kumar, *Plasmonic Nanostructures* – ***Invited talk*** at the One day Seminar on Nanoscience and Nanotechnology, held at University of Delhi, INDIA, March 14, 2014.

P. Senthil Kumar, *Plasmonics - The Nanoscale Optics* – ***Invited talk*** at the Visitor's Programme, held at University of Delhi, INDIA, March 12 - 13, 2014.

Signature of Faculty Member

- You are also requested to also give your complete resume as a DOC or PDF file to be attached as a link on your faculty page.