

# Curriculum Vitae

## Dr. Davuluri Srikala

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**Current Position:** Assistant Professor, Department of Physics & Electronics, Hans Raj College,  
University of Delhi, Delhi 110007

**E-mail:** [srikala.d@gmail.com](mailto:srikala.d@gmail.com)

### Academic Qualifications

- Ph. D (Jawaharlal Nehru University, New Delhi) in 2012.
- M. Sc Physics (Specialization: Solid State Physics) in 2004 from University of Hyderabad.

**Specialization:** Experimental Condensed Matter Physics.

### Administrative Positions held:

Administrative posts held in the Department of Physics and Electronics, Hans Raj College:

Session	Committee	Position
June 2011 – May 2012	Syllabus Revision Committee & Purchase Committee	Member
June 2012 – May 2013	Infrastructure Committee	<b>Convener</b>
June 2013 – Nov 2014	Infrastructure Committee	Member
June 2016 – May 2017	Library Committee	<b>Convener</b>
June 2017 - May 2018	Purchase Committee	<b>Convener</b>
May 2018 – June 2019	Canteen Committee	Member
May 2019 – June 2020	Lumen-Society of Department of Physics and Electronics	<b>Convener</b>

Administrative posts held in various committees of the Staff Council, Hans Raj College:

Session	Committee	Position
2017 - 2018	Women's Development Committee	Member
2018 - 2019	Canteen Committee	Member
2019 - 2020	Women's Development Committee	Member

### Teaching Experience:

- One year (**2004 - 2005**) of experience as a lecturer in Physics for Diploma in engineering students at Al-Huda Polytechnic, Andhra Pradesh.
- Two years (**2010 - Till date**) of experience as an Assistant Professor for undergraduate students at Hans Raj College, University of Delhi, Delhi.

### Theory Papers taught in Teaching:

- Solid State Physics
- Mechanics
- Electricity and Magnetism
- Thermal Physics
- Thermodynamics and Statistical Mechanics

### Organized Conferences / Training Programs:

- Organized a **Four Day Training Programme on KOHA** conducted by the Library Committee of Hans Raj College, University of Delhi, from November 25<sup>th</sup> – 20<sup>th</sup>, 2016.
- Organized a National Conference on “Advanced Materials: Theory and Applications” **as a co-convenor at Hans Raj College, University of Delhi from September 26 – 28<sup>th</sup>, 2019.**
- Worked in the Organizing team to organize a Seminar on “Crime against women in conflict area and areas affected by natural calamities” Organized by Women’s Development Cell, Hans Raj College, in collaboration with National Commission for Women on 31<sup>st</sup> Jan 2020 at Hans Raj College.

### Professional Experience (Participation in Orientation Courses / Refresher’s Courses / Faculty Development Program)

1. Attended “**83<sup>rd</sup> Orientation Course**” held at UGC-ASC, University of Hyderabad, Hyderabad June 28 – July 25, 2013.
2. Attended “**Online Refreshers Course on Astronomy and Astrophysics**”, organized by TLC, IUCAA, Pune, May 11 – June 12, 2020.
3. Attended **Two week online Faculty Development Program on “Managing online classes and co-creating MOOCS 3.0”** organized by TLC, Ramanujan College, University of Delhi, July 25 – Aug 10, 2020.
4. Attended **One week Faculty Development Program on “ICT in Education and Cyber – Security”** organized by MHFDC, Hans Raj College, July 10-16, 2019.
5. Attended **One week Faculty Development Programme on "E-content Generation and Managing Online Teaching"** organized by Sri Aurobindo College (E), University of Delhi in collaboration with MHFDC, Hans Raj College, University of Delhi, Dec 11-17, 2020.

### **DBT-Minor projects under the Star College Scheme of the Hans Raj College:**

1. Project Investigator in “Designing a variable DC Power Supply”.
2. Project Investigator in “Efficiency of Immersion Heater”

### **Participation in Workshop / Seminars / Webinars:**

1. Participated in the “Symposium on the Application of Nuclear Magnetic Resonance to Material & Medicine” organized by the IIT Delhi, November 21<sup>st</sup>, 2006.
2. Participated in the “4<sup>th</sup> Advanced School on Nanoscience & Technology” organized by the Unit for Nanoscience and Technology, S. N. Bose National Center for Basic Sciences, Kolkata, Jan 12 – 24, 2009.
3. Participated in *Active Learning Integrating Hands on Experiments and Multimedia Resources: A Collaborative workshop for undergraduate physics teachers* held at D S Kothari center for research and innovation in science education held at Miranda House, University of Delhi (7 – 8 October 2013).
4. Participated in the DBT sponsored seminar on “Physics of Stars” held on April 1, 2016 at Dept. of Physics and electronics, Hans Raj College, University of Delhi.
5. Participated in Faculty development programme on MATLAB held on Oct 4, 2016 at Dept. of Physics and electronics, Hans Raj College, University of Delhi.
6. Participated in Faculty development workshop on Embedded systems and synthesis of Nano materials held on Jan 6-7, 2017 at Dept. of Physics and electronics, Hans Raj College, University of Delhi.
7. Participated in the half-day faculty empowerment workshop “Presentation tools for modern age educators” held on 10 Nov 2016 at Guru Angad Dev Teaching Learning Center of MHRD at S.G.T.B Khalsa College, University of Delhi.
8. Participated in the DBT – star college scheme sponsored Faculty Development Programme on “Advances in Optoelectronics” and “MATLAB” held on Oct 4, 2017 at Dept. of Physics and electronics, Hans Raj College, University of Delhi.
9. Participated in the seminar cum workshop on “Quantum entanglement and the EPR paradox” and “Computer interfaced science experiments using EXPEYES” on 30 March 2017 at Dept. of Physics and electronics, Hans Raj College, University of Delhi.
10. Participated in the National Leadership Summit on “Excellence in Higher Education: Current Challenges & the Road Ahead” organized by MHFDC & IQAC, Hans Raj College, December 6-7<sup>th</sup>, 2019.

11. Participated in the seminar on “Radiation Hazards and Monitoring: Techniques and Materials” on 10 April 2017 at Dept. of Physics and electronics, Hans Raj College, University of Delhi.
12. Participated in a Seminar “Crime against women in conflict area and areas affected by natural calamities” Organized by Women’s Development Cell, in collaboration with National Commission for Women on 31<sup>st</sup> Jan 2020 at Hans Raj College.
13. Participated in the National Seminar on “Environment and Sustainability in the third world”, organized by Department of Chemistry & IQAC, Hans Raj College on 28 Feb 2020.
14. Participated in a one day webinar on “Teachers and Technology: The road ahead”, organized by MHFDC, Hans Raj College on April 25<sup>th</sup>, 2020.
15. Participated in one day webinar on “Leadership role in uncertain times” organized by MHFDC, Hans Raj College on April 30<sup>th</sup>, 2020.
16. Participated in Three day webinar on “Stress Management during Covid-19 phase” organized by MHFDC, Hans Raj College between May 1 -3, 2020.
17. Participated in a two day webinar on “Material Science, Technology and Society (MSTS 2020)” organized by School of Physical Science, Jawaharlal Nehru University between 8-9 May, 2020.
18. Participated in a one day webinar on “Basic documentation for teachers” organized by MHFDC, Hans Raj College on June 22<sup>nd</sup>, 2020.
19. Participated in a International webinar on “Emerging trends in Physics and its applications in Agriculture” organized by Department of Physics, College of Basic Sciences and Humanities, CCS Haryana, Agricultural University, Hisar, Haryana on 29<sup>th</sup> June 2020.
20. Participated in a Three day National Online “Experimental Workshop Simulation in Physics (NEWSP: 2020) organized by Indian Association of Physics Teachers-Asian Physics Olympiad Cell (IAPT-APHO Cell) from July 10 -12, 2020.

### **Academic Interests:**

- Synthesis of ferromagnetic, semiconductor, dilute semiconductor and superconductor nanomaterials by chemical method and electro-explosion wire technique.
- Study of various phenomena like interfacial interactions, defects, oxidation and doping in magnetic nanosystems that effect the magnetic behavior of pure magnetic materials.
- Investigation of exchange-bias effect in pure antiferromagnetic materials.
- Study of optical and magnetic properties in semiconductor and dilute magnetic semiconductor (PbSe) nanomaterials.
- Investigation of spin interactions and their microscopic origin in magnetic nanocomposites.

## Research Publications:

1. Control of Magnetism in Cobalt Nanoparticles by Oxygen Passivation.  
**D. Srikala**, V. N. Singh, A. Banerjee, B. R. Mehta and S. Patnaik, *Journal of Physical Chemistry C* 112, 13882 (2008).
2. Synthesis and Characterization of ferromagnetic Cobalt Nanospheres, Nanodiscs and Nanocubes.  
**D. Srikala**, V. N. Singh, A. Banerjee, B. R. Mehta and S. Patnaik, *Journal of Nanoscience and Nanotechnology* 9, 5627 (2009).
3. Effect of induced shape anisotropy on magnetic properties of ferromagnetic cobalt nanocubes.  
**D. Srikala**, V. N. Singh, A. Banerjee and B. R. Mehta, *Journal of Nanoscience and Nanotechnology* 10, 8088 (2010).
4. Signatures of spin-glass freezing in Co/CoO nanospheres and nanodiscs.  
**D. Srikala**, V. N. Singh, B. R. Mehta and S. Patnaik, *Journal of Magnetism and Magnetic Materials* 324, 2512 (2012).
5. Magnetic properties of Cobalt nanoparticles of various shapes.  
**D. Srikala**, A. Banerjee and S. Patnaik, *Indian Journal of Cryogenics*, vol.33, No.(2-4), 60 (2008).
6. Cryogen-free low temperature and high magnetic field apparatus.  
S. D. Kaushik, Anil K. Singh, **D. Srikala** and S. Patnaik, *Indian Journal of Pure and Applied Physics* 46, 334 (2008).

## Participation in Conferences / Seminars / Workshops in Research:

1. Synthesis and characterization of Niobium nanoparticles.  
**D. Srikala**, K. V. Ramesh, O. P. Siwachi, P. Sen, and S. Patnaik; Oral presentation at *National Conference on Nanomaterials and Nanotechnology* held at Department of Physics, University of Lucknow, Lucknow Dec 8 -10, (2007).
2. Apparatus for RF penetration depth measurement down to 2 K with GM crycoolers.  
S. D. Kaushik, **D. Srikala**, and S. Patnaik; Proceeding of *52<sup>th</sup> DAE Solid State Physics Symposium* (2007), page 433.
3. Size effect on the magnetic properties of Cobalt nanocubes.  
**D. Srikala**, and S. Patnaik; Proceeding of *53<sup>rd</sup> DAE Solid State Physics Symposium* (2008), page 395.
4. Synthesis and characterization of Cobalt nanoparticles.

**D. Srikala**, and S. Patnaik; Presented at International Conference on Nano Science and Technology (ICONSAT) held at Chennai, Feb 27-29, (2008).

5. Property variation with shape in ferromagnetic Cobalt nanocubes.

**D. Srikala**; Presented at International Conference on Advanced Nanomaterials and Nanotechnology (ICANN) held at Guwahati, Dec 9-11 (2009).

6. Synthesis and Characterization of PbSe nanoparticles.

**D. Srikala**, and S. Patnaik; Presented at International Conference on Nano Science and Technology (ICONSAT) held at IIT Bombay (2010).

7. Magnetic behavior of oxygen passivated Cobalt nanoparticles.

**D. Srikala** and S. Patnaik; Presented at Material Research Society (MRS) Spring Meeting, San Francisco, USA (2010).

8. Synthesis and Characterization of PbSe and  $\text{Pb}_{1-x}\text{Co}_x\text{Se}$  nanoparticles.

**D. Srikala** and S. Patnaik; Presented at Material Research Society (MRS) Spring Meeting, San Francisco, USA (2010).

9. Exchange Bias in Co nanoparticles.

**D. Srikala** and S. Patnaik; Presented at National Seminar on Advances in Materials and Devices, ITM University (2010).