

# Radhika Prasad

**Date of Birth:** 29<sup>th</sup> April 1997

## **Educational Qualifications:**

Class	Institute	Board	Year/Duration	Grade/Percentage
10	The Mother's International School, New Delhi	CBSE	2013	10.0 CGPA
12	The Mother's International School, New Delhi	CBSE	2015	95.4%
BSc (Hons) Physics	Miranda House	University of Delhi	2018	9.149 CGPA
MSc Physics	Indian Institute of Technology, Kanpur	-	2018-2020	9.3 CPI (at the end of 3 semesters)

## **AWARDS and SCHOLARSHIP**

**OeAD Scholarship** by the Austrian Agency for International Mobility and Cooperation in Education, Science and Research for carrying out research at IST Austria (**May 2019-July 2019**)

**Scholarship for Higher Education (SHE)** by the Department of Science and Technology (DST), Govt. of India, under their Innovation in Science Pursuit for Inspired Research (INSPIRE) scheme. The award is given to top 1% of the graduating school students for pursuing higher education. I have got the scholarship for the period (**2015-2020**).

**National Initiative on Undergraduate Science (NIUS) scholar 2016;** Awarded to top 40 Physics students from all over India by Homi Bhabha Centre for Science Education (HBCSE) of Tata Institute of Fundamental Research (TIFR), Department of Atomic Energy, Govt. of India. Attended two summer camps (2016 and 2017) under this program and worked on the project Analysis of Diffraction of Light with Tracker Software.

2<sup>nd</sup> position (at Miranda House centre) in National Graduate Physics Examination (NGPE), 2017  
3<sup>rd</sup> position in Miranda House Baseline Test 2015, Physics (out of all 1st, 2nd and 3rd year students)

All India Rank of 35 in Joint Admission Test for M.Sc. (JAM), 2018. Number of students writing the test >10,000.  
All India Rank of 119 in Joint Entrance Screening Test (JEST), 2018.  
Qualified JEE Advanced 2015  
Qualified JEE Mains 2015

## **Computational Projects:**

2019: Simulating Surface Water Waves in Analogy with Schrödinger Equation: Research internship at IST Austria under Prof. Chris Wojtan (as part of ISTernship from May 2019 to July 2019)

2019: Analysis of Normal Numbers: Project in a course *Computational Physics* by Prof Mahendra K. Verma, Department of Physics, Indian Institute of Technology, Kanpur

2018: Wolfram Demonstrations:

- Kepler Orbits
- Fraunhofer Diffraction through a Rectangular Aperture
- Spread of a Gaussian Wave Packet with Time. Also selected to be featured on Miranda House college website.

The above are Mathematica simulations published by the Wolfram Demonstrations Project at

<http://demonstrations.wolfram.com/author.html?author=Radhika+Prasad>

2018: Rolling of Square Wheel on Catenary: C++ program made under the guidance of Dr SN. Sandhya, Department of Physics, Miranda House, University of Delhi (<https://www.youtube.com/watch?v=aYhuIEMXY7o>)

2015: Fractals (in C++), Class 12 CBSE Board project (<https://prasadradhika.wordpress.com/fractals/>)

2014: C++ Games

- Pong (<https://www.youtube.com/watch?v=DP7g0Cd5Ybl>)
- Football Freekick (<https://www.youtube.com/watch?v=dRbfyHguYyU>)

2014: Ugly Duckling in Sanskrit, Flash Animation (<https://www.youtube.com/watch?v=i9LUbm4jV8Q>)

## **Experimental Projects:**

2020: Investigating Schmidt Spectrum of Entangled Photons in Spontaneous Parametric Down Conversion (ongoing project under supervision of Prof Anand K. Jha at IIT Kanpur)

2019: Investigating Position-Momentum Entanglement in Spontaneous Parametric Down-Conversion (MSc project under supervision of Prof Anand K. Jha at IIT Kanpur)  
2018: Building an Ornithopter, Aeromodelling Club, IIT Kanpur.  
2017: Energy Harvesting by Piezoelectric Devices (project in a course *Renewable Energy and Energy Harvesting* by Dr. Monika Tomar, Department of Physics, Miranda House, University of Delhi)  
2017: Analysis of Diffraction of Light with Tracker Software (June 2016-December 2017; under supervision of Dr. Rajesh B. Khaparde at HBCSE-TIFR; a research paper to be published is under preparation)  
2015: Experiments on Diffraction, Class 12 CBSE Board project  
(<https://prasadradhika.wordpress.com/2015/05/31/diffraction-project/>)

### **Camps and Workshops:**

MATLAB Workshop, IIT Kanpur (August 2018)  
COMSOL Multiphysics Workshop, IIT Kanpur (August 2018)  
A Journey to the Cosmos: virtual tour of CERN organised by Miranda House (August 2017)  
Materials Chemistry (nanoparticles) Workshop (July 2016), Miranda House, University of Delhi  
NIUS Physics Camp 13.1 (June 2016), HBCSE-TIFR, Mumbai

### **Major Courses Completed:**

Mathematical Physics (Vector Analysis, ODE and PDE, Special Functions, Fourier Series and Transform, Laplace Transform, Complex Analysis, Linear Algebra, Tensors, Real Analysis, Calculus of Variations, Group Theory, Probability), Waves and Optics, Thermal Physics, Electronics (digital and analog), Quantum Mechanics, Introductory Nuclear and Particle Physics, Statistical Mechanics, Electromagnetic Theory, Classical Dynamics, Experimental Physics, Condensed Matter Physics, Introduction to Photonics

### **Computer Skills:**

C++, Mathematica, Python, Scilab, MATLAB, ImageJ, Tracker, Excel, Word, PowerPoint, Adobe Flash, HTML, MySQL, Logo

I am deeply interested in Physics. Performing experiments really excite me. I would like to pursue it and go for higher studies and research in Physics.

### **Hobbies:**

Programming; Making polyhedron models; Rubik's cube and other puzzles; Solving Sudoku; Playing football, table tennis and lawn tennis; Bird watching; Night Sky watching; Photography; Origami; Playing bansuri (Indian flute); Drawing and painting. Details at my website (<https://prasadradhika.wordpress.com/>) and my YouTube channel ([https://www.youtube.com/channel/UCjfmecXL961a\\_Tl5wJgfCvw](https://www.youtube.com/channel/UCjfmecXL961a_Tl5wJgfCvw))

### **Extra-Curricular Activities and Awards:**

1. Volunteer for SPIC MACAY (Society for the Promotion of Indian Classical Music And Culture Amongst Youth) IIT Kanpur chapter, 2018-2020
2. Member of Vidyut editorial board (Miranda House Physics Society), 2018
3. Sports:
  - a. Football:
    - i. Member of IIT Kanpur team (silver medal in Udghosh 2019)
    - ii. Member of Under 17 Delhi team in 2011 National Games at Imphal
  - b. Table Tennis:
    - i. Captain of IIT Kanpur team (gold medal at Inter IIT Sports Meet 2019, silver medal in Sportech 2019, silver medal in Spardha 2019, silver medal in Udghosh 2019, bronze medal in Udghosh 2018)
    - ii. Member of Miranda House team 2016
    - iii. Zonals (zone S-23, 1<sup>st</sup> position in 2015, 2014, 2013, 2011, 2010, 2009; 2<sup>nd</sup> position in 2012)
    - iv. Delhi District Table Tennis Tournament, 2009 (3<sup>rd</sup> position)
4. Participated in community service programme "Reaching Out" (taught underprivileged students) in 2014
5. My photograph titled "Water Crown" (depicting a water droplet) was selected in Nicefoto 2011, an international photography exhibition and was exhibited at India Habitat Centre, New Delhi.  
(<https://prasadradhika.wordpress.com/2015/05/31/photography/>)
6. Global Warming Reduction Award 2009 (for spreading environmental awareness)

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