

Dr. Vikram Sagar

Assistant Professor

Department of Physics

GGDSD COLLEGE Chandigarh

India -160030

[vikram.sagar@ggdsd.ac.in](mailto:vikram.sagar@ggdsd.ac.in)

[narang.vikram@gmail.com](mailto:narang.vikram@gmail.com)

DOB: 13th Octber 1981



Educational Qualifications	Ph.D, Physical Sciences, Homi Bhabha National Institute Supervisor: Late Prof. P.K. Kaw Topic: Laser driven acceleration of charged particle in vacuum. C.I: Institute for Plasma Research (IPR), Gandhinagar, India.	[2006-2013]
	Master of Science in Physics (Hons. School) Dept. of Physics, Panjab University, Chandigarh, India.	[2003-2005]
	Bachelor of Science in Physics (Hons. School) Dept. of Physics, Panjab University, Chandigarh, India.	[2000-2003]

Teaching/Research Experience	<p><b>Teaching Experience</b>  Assistant Professor, Goswami Ganesh Dutta Sanatan Dharma College[Sept., 2020 - Till Date]  Guest Faculty, Dept. of Physics, Panjab University[July 2019- May-2020]  Assistant Professor, Akal University, Talwandi Sabo[Feb., 2018 - July 2019]</p> <p><b>Research Experience</b></p> <p>Designation: Postdoctoral Fellow [Jan, 2018-Feb, 2018]  Supervisor: Prof.Sudip Sengupta  Institute For Plasma Research, Gandhinagar, India  Research Area: Study of Dynamical processes over complex networks.</p> <p>Designation: Postdoctoral Fellow [June, 2015-Dec, 2017]  Supervisor: Prof.Yi Zhao  Harbin Institute of Technology, Shenzhen, China  Research Area: Dynamical processes over complex networks.</p> <p>Designation: Postdoctoral Fellow [July, 2013-June, 2015]  Supervisor: Prof.P.K.Kaw  Institute For Plasma Research  Research Area: Particle acceleration by ultra intense finite duration laser pulses.</p>
Areas of Interest	Plasma physics (with emphasis on advanced acceleration schemes using high powered lasers) and Complex Networks (Study of epidemic processes in natural and artificial networks)
Publications (Journal/Book Chapters)	<p>Journal Publications:</p> <ol style="list-style-type: none"> <li>1. Exact Analysis of Particle Dynamics in Combined Field of Finite Duration Laser Pulse and Static Axial Magnetic Field, Vikram Sagar, Sudip Sengupta and P K Kaw, Phys. Plasmas 19, 113117 (2012); doi:<a href="http://dx.doi.org/10.1063/1.4769096">http://dx.doi.org/10.1063/1.4769096</a></li> <li>2. Adiabatic Formulation of Charged Particle Dynamics In An Inhomogeneous Electromagnetic Field, Vikram Sagar, Sudip SenGupta, P K Kaw, Journal Laser And Particle Beams, 31, Issue 03, pp 439-455 (2013);doi: 10.1017/S0263034612001139</li> <li>3. Effect of Laser Pulse Polarization and Focusing On Particle Acceleration By Cyclotron Auto-Resonanc Vikram Sagar, Sudip Sengupta, P K Kaw, Phys. Plasmas, 21, 043102 (2014); <a href="http://dx.doi.org/10.1063/1.4870001">http://dx.doi.org/10.1063/1.4870001</a>.</li> <li>4. Radiation reaction effect on laser driven autoresonant particle acceleration, Vikram Sagar, Sudip Sengupta, P K Kaw, Phys. Plasmas, 22, 123102 (2015);<a href="http://dx.doi.org/10.1063/1.4936797">http://dx.doi.org/10.1063/1.4936797</a>.</li> <li>5. Collective effect of personal behavior induced preventive measures and differential rate of transmission on spread of epidemics, Vikram Sagar, Yi Zhao, Chaos 27, 023115 (2017); doi:10.1063/1.4976953.</li> <li>6. Optimization of chemical flocculation of Scenedesmus obliquus grown on municipal wastewater for improved biodiesel recovery, Abd El-Fatah</li> </ol>

	<p>Abomohra, Wenbiao Jin, Vikram Sagar, Gehan Ismail, Renewable Energy, 115, PP. 880-886, (2018). <a href="https://doi.org/10.1016/j.renene.2017.09.019">https://doi.org/10.1016/j.renene.2017.09.019</a>.</p> <p>7. Effect of time varying transmission rates on the coupled dynamics of epidemic and awareness over a multiplex network. Vikram Sagar, Yi Zhao, Abhijit Sen, Chaos 28, 113125 (2018). <a href="https://doi.org/10.1063/1.5042575">https://doi.org/10.1063/1.5042575</a>.</p> <p>8. Effect of layer density on self-consistent dynamics of interdependent process over multiplex. under preparation.</p>
<p>Seminars/ Conferences/Sympo siums  (Paper Presented)</p>	<ul style="list-style-type: none"> <li>• 55th Annul meeting of APS division of plasma physics held at Denver, Co. USA on November, 11-15, 2013.</li> <li>• 54th Annul meeting of APS division of plasma physics at Rhode Island Convention Center Providence, RI. USA held on October 29-November-2, 2012.</li> <li>• 1st PSSI-Plasma Scholars Colloquium (PPSC-2012), 3 - 4 July, 2012.</li> <li>• 2nd IPR Scholars Research Colloquium, Oct. 2011.</li> <li>• 25th National Symposium on Plasma Science and Technology - Plasma-2010, CPP, Guwahati, December 2010.</li> <li>• International Symposium On Waves Coherent Structures and Turbulence In Plasmas, January 2010.</li> <li>• 24th National Symposium on Plasma Science and Technology - Plasma-2009, NIT,Hamirpur, December 2009.</li> <li>• 22nd NatioNational Symposium on Plasma Science and Technology - Plasma-2007, IPR, Gandhinagar, India, December 2007</li> </ul>
<p>Refresher Courses/Workshops/ Training Programmes</p>	<ul style="list-style-type: none"> <li>• Attended seven days faculty development course on "NEP 2020 and Ethical Paradigm in Pedagogy" from 21-06-22 to 27-06-2022 conducted by Goswami Ganesh Dutta SD College Sector 32, Chandigarh in collaboration with Human Resource Development Center Panjab University Chandigarh under Rusa 2.0 grant</li> <li>• Successfully completed Online Inter-Disciplinary Two-Week Refresher Course On “Managing Online Classes &amp; Co- creating MOOCS 14.0” from 07 – 21 May, 2022 and obtained Grade A+ conducted by Teaching Learning Centre, Ramanujan College University of Delhi under the aegis of MINISTRY OF EDUCATION PANDIT MADAN MOHAN MALAVIYA NATIONAL MISSION ON TEACHERS AND TEACHING.</li> <li>• Undergone Innovation Ambassador (IA) training foundation level (Total 15 Sessions of 30 contact hours) conducted in online mode by MOE innovation cell &amp; AICTE during IIC calendar year 2021-22.</li> <li>• Participated in Online Faculty Development Programme on Model Based Simulations in Classical Physics Using XCOS 15 - 21 November, 2021 Organized by Department of Physics and Astronomical Sciences Central University of Himachal Pradesh (CUHP) and Indian Association of Physics Teachers(IAPT)</li> <li>• Successfully completed a 4-Week Induction/Orientation Programme wth A+grade for “Faculty in Universities/Colleges/Institutes of Higher Education” from March 15-April 14, 2021, organized by Teaching Learning Center, Ramanujan College, University of Delhi, under the aegis of MINISTRY OF EDUCATION PANDIT MADAN MOHAN</li> </ul>

	<p>MALAVIYA NATIONAL MISSION ON TEACHERS AND TEACHING.</p> <ul style="list-style-type: none"> <li>• Completed Five Days Online faculty Development Programme on “Research Methodology and Project Writing” Organized by Institutional Development Plan (IDP, OHEPEE) cell of Rama Devi Women University, Vidhya Vihar, Bhubaneswar, Odishia held during 07-11 July, 2021.</li> <li>• Completed Online Faculty Development Programme on Quantum Physics Simulations Using Gnumeric Worksheets 1 - 7 August, 2021 Organized by Department of Physics and Astronomical Sciences Central University of Himachal Pradesh (CUHP) and Indian Association of Physics Teachers–Regional Council3(IAPT-RC3).</li> <li>• Participated in one week Faculty Development Program on Machine learning using python conducted by Electronics &amp; ICT Academy, IIT Roorkee at Panjab University on March-02 to March-06, 2020.</li> <li>• ASian core program for High energy density science Using intense LASer photons (ASHULA) at Lonavala, Maharashtra, India on 20-21 January, 2015.</li> <li>• SERB school on HIGH INTENSITY LASER PLASMA INTERACTION, IIT Delhi, 5 May - 23 May 2014.</li> <li>• SERC school on NON-LINEAR DYNAMICS, Panjab University, Chandigarh, 27-Jan- 18-Feb. 2014.</li> <li>• SERC school on NON-LINEAR DYNAMICS, Delhi University, Delhi, 8-24 Dec. 2009.</li> <li>• School on TOOLS OF THEORETICAL PHYSICS AND THE PROBLEM OF TURBULENCE, SNBNBS, Kolkata, 16-21 Feb. 2009.</li> <li>• INSA-JSPS meeting at IPR, Gandhinagar on Nov 30-Dec 1,2007.</li> </ul>
Invited Talks	<ul style="list-style-type: none"> <li>• Delivered a presentation on the topic "Simulation of Lorentz Attractor in XCOS" in one week FDP programme jointly organized by CUHP and IAPT November 15 - 21, 2021.</li> <li>• Invited talk on “Overview- Plasma Physics and its Application “at 7th IAPT NSSP held at Panjab University Chandigarh on Oct. 3-5 2019.</li> <li>• Particle acceleration by Intense Lasers in Vacuum, ASHULA meeting, Lonavala., India on Jan 2015.</li> <li>• Electron Acceleration by Intense Lasers in the Presence of Background Stochastic Fields, SERB School, IIT Delhi, May 2014.</li> <li>• Particle Dynamics In Intense Laser Fields, SERC School, Non-Linear Dynamics, Panjab University, Chandigarh, Feb. 2014.</li> <li>• Laser Driven Particle Acceleration In Vacuum , IPR, Gandhinagar, July 2013.</li> <li>• Adiabatic formulation for charged particle motion in an inhomogeneous electro-magnetic field, 1st Annual Student Research Colloquium, IPR, Gandhinagar, April 2011.</li> </ul>
Projects	NIL
MOOCS/Online Content	NIL
M.Sc Dissertation Supervised	Degree awarded:07

PhD Thesis	Degree awarded:0 Currently Supervising:0
Administrative Experience	<ul style="list-style-type: none"> <li>• IIC Coordinator, GGSDS College Chandigarh</li> <li>• Sub-Registrar Sciences GGSDS College Chandigarh</li> <li>• Member of Green Campus Committee GGSDS College Chandigarh</li> <li>• Member of Mentor-Mentee GGSDS College Chandigarh</li> <li>• Member of IQAC of Akal University Talwandi Sabo.</li> <li>• Member of Board of Studies for Physics in the Department of Physics Akal University Talwandi Sabo.</li> <li>• Member Student welfare committee at Akal University Talwandi Sabo.</li> <li>• Member research promotion committee at Akal University Talwandi Sabo.</li> </ul>
Membership Fellowship of Learned Bodies/Societies	<ul style="list-style-type: none"> <li>• Life member India association of Physics Teachers since 2020.</li> <li>• Life member Plasma Science Society of India (PSSI) since 2007.</li> <li>• Member American Physical Society-Division Plasma Physics (APS-DPP) 2012-14.</li> <li>• Member Association of Asia Pacific Physical Societies- Division of Plasma Physics (AAPSDPP).</li> <li>• Member Physics Association, dept. of Physics, Panjab University.</li> </ul>

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