


Faculty Profile: For University Website

DEPARTMENT OF PHYSICS

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Office Address	<ul style="list-style-type: none"> • Room No.126, Department of Physics, Science Building, Cheri- Manatu campus, Central University of Jharkhand Ranchi, Jharkhand, India 	
Educational Qualification:	<ul style="list-style-type: none"> • Ph. D. (2011), Indian Institute of Technology, Roorkee, India • M. Tech. (2007), Indian Institute of Technology, Delhi, India 	
Courses Taught:	<ul style="list-style-type: none"> • Solid State Physics • Waves and Oscillations • Plasma and Space Physics • High energy Physics I • Vector calculus • Heat and Thermodynamics • Planetary Physics • Solar Environment • Experiment Techniques in Physics • 	
Additional role/ responsibility:	<ul style="list-style-type: none"> • NCC officer, CUJ • Department Time Table In-charge and lab in-charge 	
Professional /Administrative Experience:	<ul style="list-style-type: none"> • Assistant Professor (August 2012- Present), Department of Physics, Central University of Jharkhand, Ranchi, India • Assistant Professor (January 2012-July 2012), Department of Physics, Galgotias University, Greater Noida, U.P, India 	

Awards & Honours	<ul style="list-style-type: none"> • Senior Research Fellowship (2009-2011), Indian Institute of Technology, Roorkee, India • Institute Research Fellowship (2007-2009), Indian Institute of Technology, Roorkee, India
Research Area:	Heavy quark physics, Relativistic nucleus nucleus collisions and early universe
Research Guidance:	<p>Ph. D.: 04(Awarded:01; Submitted: 01; Pursuing: 02), M. Sc.: 28</p> <ol style="list-style-type: none"> 1. Quarkonium Dissociation As A Probe of Color Screening in Hot QCD Medium (Dr. Indrani Nilima, 2018, Awarded). 2. Quarkonium Properties in the Presence of Magnetic Field in Hot Quark Gluon Plasma (Manohar Lal, 2023, Submitted) 3. Study of Quarkonium in Hot QCD medium with chemical potential using Quasi Particle Approach (Siddhartha Solanki, ongoing) 4. Quarkonium properties in hot QCD medium using holographic Approach (Rishabh Sharma, ongoing)
Brief introduction:	<p>Dr. Vineet Kumar Agotiya is actively involved in teaching and Research & Development activity for the development of various types of high energy physics model. He is also involved in R&D in collaboration with IIT and other national importance institutes. Dr. Agotiya has a considerable teaching and research experience of around twelve years in various capacities at different levels. He has made immense contributions in the areas of High energy physics. He has published eighteen research articles in different SCI journals of international and national repute. The one Ph.D., twenty eight M.sc. students have been awarded thesis dissertation under his guidance.</p>
Project (Completed/ Ongoing)	<ol style="list-style-type: none"> 1. Dr. Vineet Kumar Agotiya (PI) received a research Grant of 24.56 lakhs from DST-SERB EEQ scheme on 2019 for the project entitles “Study of quarkonium in Hot QCD medium using Quasi Particle Approach” (Ref. No.: EEQ/2018/000181); Duration: 03 years, Status: Completed. 2. Dr. Vineet Kumar Agotiya (PI) received a research Grant of 6.00 lakh from UGC-BSR scheme on July 2014 for the project entitles “Some outlook of strongly interacting quark Gluon Plasma” (Ref. No.: UGC-BSR startup grant); Duration: 02 years, Status: Completed

Articles Published/ Accepted:	<p>Total Publications (18)</p> <ol style="list-style-type: none"> 1. Siddhartha Solanki, Manohar Lal, Rishabh Sharma and Vineet Kumar Agotiya, “Dissociation and thermodynamical properties of heavy quarkonia in an anisotropic strongly coupled hot quark gluon plasma: Using a baryonic chemical potential”, Physical Review C, 109, 024905 (2024). 2. Siddhartha Solanki, Manohar Lal, and Vineet Kumar Agotiya, “Dissociation of J/ψ and Y using dissociation energy criteria in N- dimensional space”, Advances in high energy physics, Volume 2024, Article ID 1045067, https://doi.org/10.1155/2024/1045067 3. Manohar Lal, Siddhartha Solanki, Rishabh Sharma and Vineet Kumar Agotiya “Anisotropic Behavior of S-Wave and P-Wave States of Heavy Quarkonia at Finite Magnetic Field”, Advances in high energy physics, Volume 2023 article ID 6922729, https://doi.org/10.1155/2023/6922729 4. Siddhartha Solanki, Manohar Lal, Rishabh Sharma and Vineet Kumar Agotiya, “study of quarkonium properties using SUSYQM method with baryonic chemical potential”, International journal of modern physics A, volume 37, pages - 2250196-127(2022). 5. Manohar Lal, Siddhartha Solanki, Rishabh Sharma, and Vineet Kumar Agotiya, “Melting of Quarkonia in strong magnetic field” Indian journal of pure and applied Physics, Vol. no. 60, PP. 475-481(2022). 6. Siddhartha Solanki, Manohar Lal, and Vineet Kumar Agotiya, “Study of Differential Scattering Cross-Section Using Yukawa Term of Medium Modified Cornell Potential”, Advances in High Energy Physics, Volume 2022 Article ID 1456538 (2022), https://doi.org/10.1155/2022/1456538 7. Indrani Nilima and Vineet Kumar Agotiya, Equation of states and charmonium suppression in Heavy ion collisions, Advances in High Energy Physics Article ID 9574136, Volume 2019 (2019), https://doi.org/10.1155/2019/9574136 8. Vineet Kumar Agotiya and I. Nilima, “<u>On the fate of quarkonia in quark gluon plasma medium within a Quasi-particle model</u>”, Indian journal of pure and Applied Physics, Vol. 57, August 2019, PP 531-535. 9. Indrani Nilima and Vineet Kumar Agotiya, Bottomonium suppression in nucleus- nucleus collisions using effective fugacity quasi-particle mode., Advances in High Energy Physics, (volume 2018) 12 pages, article id 8965413, https://doi.org/10.1155/2018/8965413 10. Mohammad Yousuf Jamal, Indrani Nilima, Vinod Chandra, and Vineet Kumar Agotiya, Dissociation of heavy quarkonia in an anisotropic hot QCD medium in a quasi-particle Model, Phys. Rev. D 97, 094033 – Published 31 May 2018. 11. Indrani Nilima and Vineet Kumar Agotiya, Dissociation of 1P states in hot QCD medium using quasi-Particle Model, PEPAN Letters, 15, 2, (2018). 12. Vineet Kumar Agotiya, Vinod Chandra, M. Yousuf Jamal, and Indrani Nilima, Dissociation of heavy quarkonium in hot QCD medium in a quasiparticle model, Phys. Rev. D 94, 094006, (2016). 13. Vineet Kumar Agotiya and Indrani Nilima: Charmonium Suppression in a Strongly Interacting Quark Gluon Plasma, Review of Applied Physics, 35-39, (2014).
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	<p>14. Vineet Kumar Agotiya, Lata Devi, Uttam Kakade and B. K. Patra, Strongly-interacting QGP and quarkonium suppression at RHIC and LHC energies, International J. of Mod. Phys. A Vol.27, no.2 (2012) 1250009.</p> <p>15. B. K. Patra, Lata Devi, Uttam Kakade, Vineet Agotiya and V. Chandra Charmonium and $\chi_{c,b}$ states in hot quark gluon plasma, Journal of Modern Physics, 2012, 3, 483-491.</p> <p>16. B. K. Patra, Vineet Kumar Agotiya, and V. Chandra Charmonium suppression in the presence of dissipative forces in a strongly coupled quark-gluon plasma, European Physical Journal C 67, 465, 2010.</p> <p>17. Vineet Kumar Agotiya, V. Chandra, B. K. Patra, Dissociation of quarkonium in hot QCD medium: Modification of the inter-quark potential, Phys. Rev. C 80, 025210, 2009.</p> <p>18. K. Pradeesh, C.J. Oton, V. K. Agotiya, M. Raghavendra, and G. Vijaya Prakash, Optical properties of Er^{3+} doped alkali-chloro phosphate glasses for optical amplifiers". Optical materials, 31, 155 (2008).</p>
<p>Seminar/ Workshop/ Conference Participation:</p>	<p>International Conference/Workshop</p> <ol style="list-style-type: none"> 1. Rishabh Sharma, Siddhartha Solanki, Manohar Lal, and Vineet Kumar Agotiya, "Study of thermodynamic properties and eigen functions for heavy Quarkonia in the presence of magnetic field" in the "Meghnad Saha Memorial International Conference on Frontiers of Physics" (MSMICFP-2023) during November 22-24, 2023 at the Department of Physics, University of Allahabad, Prayagraj U.P. (India). 2. S. Solanki, M. Lal, R. Sharma and V. K. Agotiya, "Thermo dynamical properties in anisotropic medium with strong magnetic field", attended the 2nd International conference on "Advancement in Core and Frontier of Physics (ACFP-2023)" in Hybrid mode organized by department of physics GLA University Mathura (17-19 February 2023). 3. Manohar Lal, Siddhartha Solanki, Rishabh Sharma, and Vineet Kumar Agotiya, "The dissociation temperatures and suppression study of the bottomonium states for the LHC energy", ECS transactions, 107(1), 2117-2126(2022). 4. Siddhartha Solanki, Manohar Lal, Rishabh Sharma and Vineet Kumar Agotiya, "Charmonium Suppression in an Anisotropic Hot QCD Medium Using Quasi-Particle Model", ECS Transactions, 107 (1) 2127-2138 (2022). 5. Rishabh Sharma, Siddhartha Solanki, Manohar Lal, and Vineet Kumar Agotiya" Study of 1P states of Quarkonia using Quasi-Particle approach with Baryonic chemical potential" XXV DAE-BRNS High Energy Physics Symposium IISER, Mohali, December 13-16, 2022. 6. Siddhartha Solanki, Manohar Lal, Rishabh Sharma and Vineet Kumar Agotiya" Dissociation baryonic chemical potential of the QGP at momentum anisotropy with quasi-particle Approach" XXV DAE-BRNS High Energy Physics Symposium IISER, Mohali, December 13-16, 2022 7. Manohar Lal, Siddhartha Solanki, Rishabh Sharma and Vineet Kumar Agotiya" Effect of Magnetic Field on 1P States of the Heavy Quarkonia." XXV DAE-BRNS High Energy Physics Symposium IISER, Mohali,

December 13-16, 2022

8. Agotiya, Vineet & Solanki, Siddhartha & Lal, Manohar. (2021). "Quarkonium dissociation properties at finite chemical potential in relativistic heavy ion collisions." **Journal of Physics: Conference Series**. 1849. 012033. 10.1088/1742-6596/1849/1/012033.
9. **Vineet Kumar Agotiya**, Siddhartha Solanki and Manohar Lal "Quarkonium dissociation properties at finite chemical potential in relativistic heavy ion collisions" National Conference on Recent Advancement in Physical Sciences (NCRAPS-2020), December 19-20, 2020 held at NIT Uttarakhand.
10. **Vineet Kumar Agotiya**, Siddhartha Solanki and Manohar Lal, "Quarkonium dissociation in Hot and Dense media using Quasiparticle model", DAE-BRNS symposium on **Cotemporary and emerging topics in High Energy Nuclear Physics (CETHENP2019)** held on 25-27 Nov, 2019 VECC Kolkata, India.
11. **Vineet Kumar Agotiya** and Indrani, Nilima "On the fate of Quarkonia in quark gluon plasma medium within a Quasi-Particle Model" International conference on Nuclear Particle and accelerator Physics, October 23-26, 2018 held at CUJ, Ranchi, India.
12. **Vineet Kumar Agotiya** and **Indrani Nilima**, Quarkonium Dissociation of an Anisotropic QGP medium in Quasi-Particle Model, National Conference on Innovations in Science and Society, February 05-06, 2017, held at Mathura, India.
13. Indrani Nilima and **Vineet Kumar Agotiya**, A comparative Study of Heavy Quark Potential with KMS Model in a Hot QCD medium within a Quasi Particle Model, Proceedings of the DAE-BRNS Symp. on Nucl. Phys. 61 (2016).
14. Indrani Nilima and **Vineet Kumar Agotiya**: Heavy quark potential and Quarkonium Binding Energies in a hot QCD medium within a Quasi-Particle Model, National Conference On Nuclear And Accelerator Physics, October 04-06, 2016, held at CUJ, Ranchi, India
15. Indrani Nilima and **Vineet Kumar Agotiya**: Quarkonium Dissociation Temperature on hot QCD medium by Quasi Particle Model, CNT QGP Meet, November 16-20, 2015, held at VECC, Kolkata, India
16. **V. Agotiya** and B. K. Patra.: ψ suppression in the presence of dissipative forces in a sQGP, International conference on Physics and Astrophysics of Quark-gluon Plasma 2010, December 05-10, 2010, held at Goa, India.
17. **V.K. Agotiya** and B. K. Patra.: Charmonium suppression: medium modification to Cornell potential and strongly interacting QGP, DAE-BRNS Symposium on High Energy Physics, December 13-18, 2010, held at LNM IIT Jaipur, India.
18. **V. K. Agotiya** and B. K. Patra.: ψ suppression: medium modified heavy quark potential and equation of state, International conference on Physics and Astrophysics of Quark-gluon Plasma 2010, December 05-10, 2010, held at Goa, India.

	<p>19. V. K. Agotiya and B. K. Patra.: Strongly interacting quark-gluon plasma and longitudinal expansion of quark-gluon plasma, DAE-BRNS Symposium on Nuclear Physics, December 20-24, 2010, held at BITS Pilani, India.</p> <p>20. V.K. Agotiya, V. Chandra and B. K. Patra.: On the fate of quarkonium in hot QCD medium, International symposium on Nuclear Physics, December 08-12, 2009, held at Bhabha Atomic Research Centre, Mumbai, India.</p> <p>21. V.K. Agotiya, V. Chandra and B. K. Patra.: Melting of quarkonium in hot QCD medium, DAE-BRNS Symposium on Nuclear Physics, December 22-26, 2008, held at Indian Institute of Technology Roorkee, India, Vol. 53, 617 (2008).</p> <p>22. B. K. Patra, V. Chandra, V. Agotiya: J/ψ suppression in nucleus-nucleus collisions, DAE-BRNS Symposium on Nuclear Physics, December 22-26, 2008, held at Indian Institute of Technology Roorkee, India December 22-26, 2008, Nucl-th/0901.2084.</p>
Program Organized:	
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