



SWAMI VIVEKANANDA UNIVERSITY

NEWSLETTER

SCHOOL OF BASIC SCIENCES

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JANUARY -
FEBRUARY
2025

MESSAGE FROM THE HOD

It gives me immense pleasure to connect with you through this edition of our newsletter. The School of Basic Sciences continues to uphold its commitment to academic excellence, research, and innovation. Our dedicated faculty and bright students are making remarkable strides in their respective fields, contributing to the ever-expanding frontiers of knowledge. This year, we have witnessed significant achievements, from groundbreaking research publications to student accomplishments in national and international forums. Our department remains focused on fostering a culture of inquiry, curiosity, and collaboration, ensuring that our students receive the best foundation in the fundamental sciences. I take this opportunity to extend my heartfelt gratitude to our faculty, researchers, and students for their unwavering dedication. Let us continue to strive for excellence and work towards making meaningful contributions to science and society.



Dr. SUBHABRATA
MONDAL
HOD and Assistant
Professor
School of Basic Sciences

MESSAGE FROM THE CONVENOR

The School of Basic Sciences is committed to fostering a culture of curiosity, innovation, and academic excellence. As we embark on another exciting semester, I encourage everyone to explore the wonders of science, collaborate across disciplines, and push the boundaries of knowledge. Let's make the most of the opportunities ahead, whether in the lab, classroom, or beyond. Together, we can achieve remarkable milestones and contribute meaningfully to the scientific community. Wishing you all a productive and inspiring term ahead!



Dr. KAZI HASIBUR
RAHMAN
Assistant Professor
School of Basic Sciences

Editor's Note

TEACHER EDITOR'S

We would like to thank to HOD Sir, Senior Teachers, Members of Editorial team and Contributors of articles for their contribution for second edition of Newsletter in 2025.

The content of this Newsletter includes latest developments in Science and interesting Articles. It is a proud moment for us to be part of Editorial team. This Newsletter provides a source of inspiration to students to find absorbing interest in Science.



Mr. Tanmoy Pal

Assistant Professor
School of Basic Sciences



Dr. Shilpa Maity

Assistant Professor
School of Basic Sciences

Events

Unified Approach

INTERNATIONAL CONFERENCE

4th to 6th February, 2025

SWAMI VIVEKANANDA UNIVERSITY, KOLKATA

Organized

INTERNATIONAL CONFERENCE

from 4th to 6th February 2025

On

Science and Technological Innovations in Agriculture Life Sciences and Food & Nutrition	Transformative Learning: Synergizing Multidisciplinary Approaches in 21st Century Education	Global Scio-Economic Outlook: Strategies For Sustainable Business Development
Advances In Psychology & Disability Management	Healthcare Researches Development	Engineering Design And Computing

Keynote Speakers

 Prof. Dr. J. Babrta Kumar Day Associate Professor, Department of Psychology, Swami Vivekananda University, Kolkata	 Prof. Dr. Deb Ranjan Bhattacharyya Associate Professor, Department of Psychology, Swami Vivekananda University, Kolkata	 Prof. Dr. J. Shantanu Chakrabarti Associate Professor, Department of Psychology, Swami Vivekananda University, Kolkata	 Prof. Dr. J. Shantanu Chakrabarti Associate Professor, Department of Psychology, Swami Vivekananda University, Kolkata	 Prof. Dr. J. Shantanu Chakrabarti Associate Professor, Department of Psychology, Swami Vivekananda University, Kolkata	 Prof. Dr. J. Shantanu Chakrabarti Associate Professor, Department of Psychology, Swami Vivekananda University, Kolkata	 Prof. Dr. J. Shantanu Chakrabarti Associate Professor, Department of Psychology, Swami Vivekananda University, Kolkata	 Prof. Dr. J. Shantanu Chakrabarti Associate Professor, Department of Psychology, Swami Vivekananda University, Kolkata	 Prof. Dr. J. Shantanu Chakrabarti Associate Professor, Department of Psychology, Swami Vivekananda University, Kolkata	 Prof. Dr. J. Shantanu Chakrabarti Associate Professor, Department of Psychology, Swami Vivekananda University, Kolkata	 Prof. Dr. J. Shantanu Chakrabarti Associate Professor, Department of Psychology, Swami Vivekananda University, Kolkata	 Prof. Dr. J. Shantanu Chakrabarti Associate Professor, Department of Psychology, Swami Vivekananda University, Kolkata
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The International Conference took place from the 4th to the 6th of February. This prestigious event brought together a diverse group of scholars, experts, and professionals from various fields across the globe. With the aim of fostering global collaboration, sharing cutting-edge research, and discussing the latest trends and developments, the conference served as an exceptional platform for intellectual exchange. Over the course of three days, the event featured a series of keynote speeches, panel discussions, and paper presentations, providing attendees with a comprehensive overview of current advancements and challenges in their respective fields. Participants had the opportunity to engage with thought leaders, academics, and industry practitioners, fostering an environment of mutual learning and networking. The conference covered a wide range of topics, offering a multidisciplinary approach to problem-solving and innovation. It also highlighted the importance of interdisciplinary collaboration in addressing the most pressing global issues of our time, from sustainable development to technological advancements and societal changes.

NIRMAN MELA

13th to 15th February, 2025



SWAMI VIVEKANANDA UNIVERSITY

13th to 15th February

Nirman Mela 2025

STARTUP FAIR

Igniting Innovation ... Inspiring Change...

Time: 10 AM to 5 PM | Venue: SVU Campus

Vocal For Local | Youth Empowerment

Everyone is Invited
Free Participation for all
Prize Money upto 1 Lakh

A flagship initiative of
Swami Vivekananda University



Nirman Mela 2025
STARTUP FAIR
Igniting Innovation... Inspiring Change...

Guest of Honour

IDEATOR
DR. NANDAN GUPTA
CHIEF GUEST, SWAMI VIVEKANANDA UNIVERSITY

DR. ABHAY JERE MR. CHANDRASEKHAR DIRECTOR OF SVU, SVU	MR. TANMAY GHOSH FOUNDER, MR. BANG SANGHVI ENTERPRISES	MISS. SUPREYA ROY FOUNDER, MR. BANG SANGHVI ENTERPRISES	MR. DIPAK SINGH ROY FOUNDER, MR. BANG SANGHVI ENTERPRISES	MR. UTSAV PAREKH FOUNDER, MR. BANG SANGHVI ENTERPRISES	MR. SAKET MONTA FOUNDER, MR. BANG SANGHVI ENTERPRISES	MR. PRADEEP SUREKA FOUNDER, MR. BANG SANGHVI ENTERPRISES	MR. PRADIP SENGUPTA FOUNDER, MR. BANG SANGHVI ENTERPRISES	MR. SUBRATA ROY FOUNDER, MR. BANG SANGHVI ENTERPRISES	MR. RAJENDRA BECKASA FOUNDER, MR. BANG SANGHVI ENTERPRISES
MR. ANJAN MITRA FOUNDER, MR. BANG SANGHVI ENTERPRISES	MR. PRABH ROY FOUNDER, MR. BANG SANGHVI ENTERPRISES	MR. SHRADHTA CHAKRABORTY FOUNDER, MR. BANG SANGHVI ENTERPRISES	MR. ANURAG CHERBAS FOUNDER, MR. BANG SANGHVI ENTERPRISES	MR. AMT SAHA FOUNDER, MR. BANG SANGHVI ENTERPRISES	DR. MANISH KADAM FOUNDER, MR. BANG SANGHVI ENTERPRISES	MR. SHAMK MISHRA FOUNDER, MR. BANG SANGHVI ENTERPRISES	MR. PATHA JAGARVA FOUNDER, MR. BANG SANGHVI ENTERPRISES	MR. ANJULI PODDAR FOUNDER, MR. BANG SANGHVI ENTERPRISES	MR. NARESH KARWAL FOUNDER, MR. BANG SANGHVI ENTERPRISES
SRINJIT GHOSH FOUNDER, MR. BANG SANGHVI ENTERPRISES	MR. RITUNILLY GHOSH FOUNDER, MR. BANG SANGHVI ENTERPRISES	DR. BITARATA MAZUMDAR FOUNDER, MR. BANG SANGHVI ENTERPRISES	MR. SUDHAKAR RAO DESAI FOUNDER, MR. BANG SANGHVI ENTERPRISES	MR. SIDDHARTH KUMAR PODDAR FOUNDER, MR. BANG SANGHVI ENTERPRISES	MR. ABHISHEK ADARWAL FOUNDER, MR. BANG SANGHVI ENTERPRISES	MR. AMRITH PODDAR FOUNDER, MR. BANG SANGHVI ENTERPRISES	MR. SUBHAS BIWAS FOUNDER, MR. BANG SANGHVI ENTERPRISES	MR. SANJAY SINHA FOUNDER, MR. BANG SANGHVI ENTERPRISES	MR. SIDDH MULLICK FOUNDER, MR. BANG SANGHVI ENTERPRISES



Swami Vivekananda University is set to host Nirman Mela, an exciting startup fair aimed at fostering innovation and entrepreneurship among students and young business enthusiasts. The event will bring together budding entrepreneurs, investors, industry experts, and mentors, providing a unique platform for showcasing groundbreaking ideas and startup ventures. Nirman Mela will feature startup exhibits, networking sessions, expert panel discussions, and investment opportunities for aspiring business owners. Attendees will have the chance to interact with successful entrepreneurs, gain insights into market trends, and explore potential collaborations. The fair will also include live pitching sessions, where participants can present their business models to a panel of investors and receive valuable feedback. With a strong focus on innovation, sustainability, and economic growth, the event aims to empower young minds by offering guidance and resources to transform their ideas into successful enterprises. Whether you're a student looking to launch your first startup or an investor searching for the next big idea, Nirman Mela promises to be a hub of inspiration and opportunities.

Blood Donation Camp

15th February



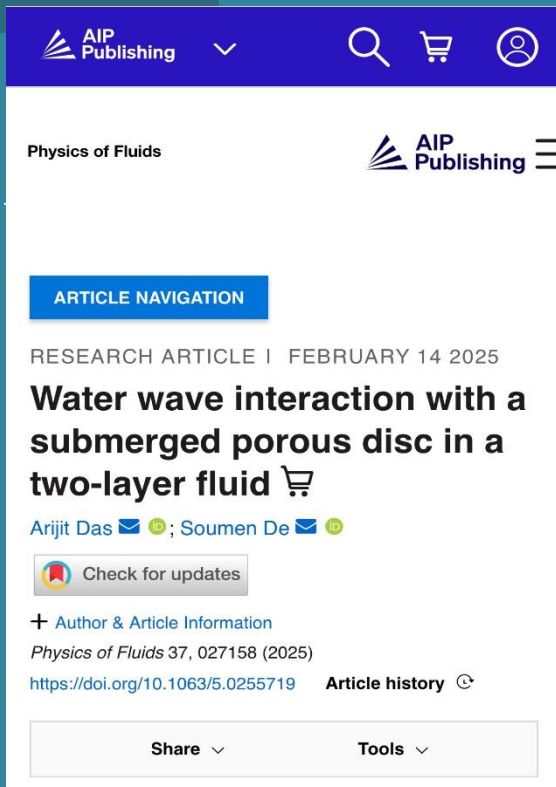
Swami Vivekananda University is organizing a Blood Donation Camp, aimed at promoting the spirit of social responsibility and saving lives. This noble initiative invites students, faculty, and staff to come forward and contribute to a life-saving cause. The camp will be conducted in collaboration with leading hospitals and blood banks to ensure a safe and efficient donation process. Medical professionals will be present to guide donors through the procedure, ensuring their comfort and well-being. Every donor will undergo basic health screening before donation, and post-donation refreshments will be provided.

Articles

Writeups That Inspire

Journal Article

Water wave interaction with a submerged porous disc in a two-layer fluid



The screenshot shows the article page on the AIP Publishing website. The header includes the AIP Publishing logo, a search icon, a shopping cart icon, and a user profile icon. The journal title "Physics of Fluids" is displayed. Below the header, there is an "ARTICLE NAVIGATION" button. The article title "Water wave interaction with a submerged porous disc in a two-layer fluid" is prominently displayed, along with the authors "Arijit Das" and "Soumen De". A "Check for updates" button is visible. At the bottom of the article information section, there are "Share" and "Tools" options.

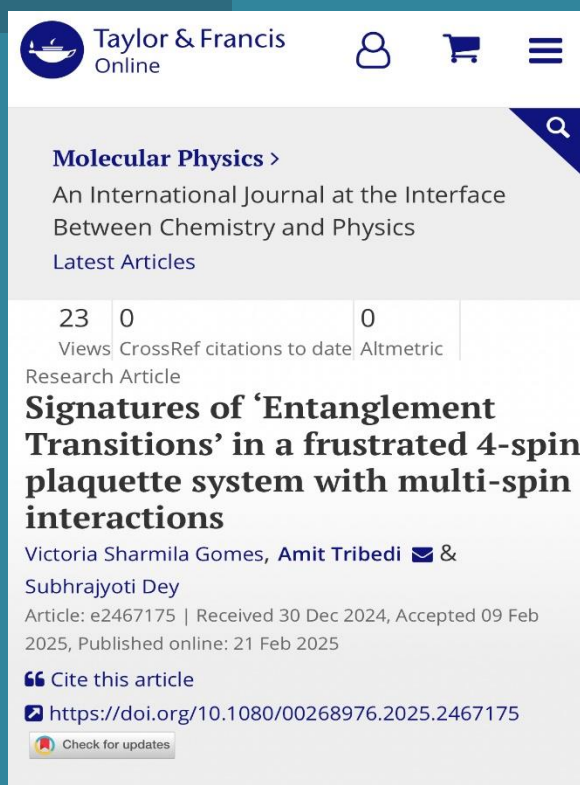
Authors(s): Arijit Das, Soumen De
Journal: Physics of Fluids
Publisher: API Publishing
Language: English
Volume : 37
Publication Year :2025
DOI :10.1063/5.0255719
IF : 4.1 (SCI Q1)

DESCRIPTION

Using linear water wave theory, we consider a three-dimensional problem concerning the interaction of waves with a submerged porous disc in a fluid containing two layers of finite depth bounded above and below by a free surface and a rigid surface, respectively. The porous disc is positioned in the upper layer. The solution is based on the domain decomposition method to avoid the complex dispersion equation that often arises while studying porous structures, making it easier for numerical implementation. The velocity potentials are determined by the matched eigenfunction expansion method. The velocity potentials in those regions that contain the porous disc as a boundary have been decomposed into several components. Each component of the velocity potential is then expressed in terms of the eigenfunctions. Matching conditions and the orthogonal properties of eigenfunction assist in determining the velocity potential.

Journal Article

Signatures of 'Entanglement Transitions' in a frustrated 4-spin plaquette system with multi-spin interactions



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Research Article

Signatures of 'Entanglement Transitions' in a frustrated 4-spin plaquette system with multi-spin interactions

Victoria Sharmila Gomes, Amit Tribedi & Subhrajyoti Dey

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Check for updates

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IF: 1.6 (SCI)

DESCRIPTION

In the context of spin systems, exchange interactions play a crucial role in generating quantum entanglement within the ground and thermal states. This entanglement has been identified as a valuable reserve for Quantum Information and Computation protocols. In our study, we focus on a spin tetramer composed of spins with a magnitude of $1/2$. These spins interact with each other through pairwise nearest-neighbour and diagonal interactions denoted as J_1 and J_2 , respectively, as well as arm-wise and diagonal-wise 4-spin interactions of strengths K_1 and K_2 respectively. The geometric arrangement of the tetramer leads to frustration – a phenomenon observed in physical systems. By performing analytical calculations, we explore the quantum correlation properties of the tetramer in both its ground and thermal states. Our investigation includes the study of bipartite and multipartite entanglements, Quantum Discord and Fidelity. Notably, we identify signatures of quantum critical transition lines, which can be referred as the 'entanglement transition lines' signalled differently by different measures.