



St. Xavier's College (Autonomous), Kolkata

NAAC GRADED A++ COLLEGE (4TH CYCLE, 2024), ISO 9001:2015 CERTIFIED

NIRF INDIA RANKING 2024: 6TH RANK IN COLLEGE CATEGORY

POSTGRADUATE & RESEARCH DEPARTMENT OF PHYSICS



SPECTRUM

SPECTRUM

2025

RIPPLES IN TIME



PRINCIPAL'S DESK



Rev. Dr. Dominic Savio, SJ
Principal,
St. Xavier's College (Autonomous), Kolkata

The department of Physics is back with its annual extravaganza, Spectrum which in its seventeenth edition promises to be bigger, better and mightier. The theme for the event this year is "Ripples In Time." They will not only explore fascinating vistas like the fabric of time but will also be launching "Horizon", the departmental magazine. Spectrum consists of a plethora of events each of which holds utmost significance in view of our rapidly evolving world. I wish them all the very best in their endeavor. Nihil Ultra- Nothing Beyond!



HOD'S DESK



Dr. Shibaji Banerjee (M.Sc., Ph.D.)
Head,
Postgraduate And Research Department of
Physics,
St. Xavier's College (Autonomous), Kolkata



Part of the rich legacy of the Department of Physics, St. Xavier's College (Autonomous), Kolkata has been celebrating and intermingling with Spectrum, the annual event conducted by the Postgraduate and Research Department of Physics, for the past sixteen years.

Put together the remarkable and ever-growing efforts, the bombilating energy, and the enthralling passion of every student of our department and you will get something as magnificent and spectacular as Spectrum, a new version every single year. I am happy to state that Spectrum 2025 is back in all its glory, mightier and more notable than it has ever been.

The theme for this year, Ripples in Time, takes us on a journey through the fabric of time, from the precision of atomic clocks to the timeless flow of cosmic evolution.

Along with Spectrum, we'll also mark the launch of our very own and much anticipated departmental magazine, Horizon, celebrating our commitment towards advancement and curiosity.

We, at the Department of Physics extend our heartfelt gratitude to all those who would participate as well as to all the spectators in the elevation Spectrum 2025 is aiming to scale



ABOUT SPECTRUM



For over sixteen years, Spectrum, the annual event of the Postgraduate and Research Department of Physics, St. Xavier's College (Autonomous), Kolkata, has been a celebration of intellect, curiosity, and discovery. Each edition is a testament to the ever-evolving spirit of our department, an electrifying fusion of knowledge, creativity, and unrelenting passion.

This year, Spectrum 2025 returns, more profound and resonant than ever, embracing the theme- *Ripples in Time*. Time shapes the universe in ways both subtle and spectacular, from gravitational waves echoing across the cosmos to atomic clocks measuring its passage with extreme precision and well, the fleeting moments which inevitably leave their mark on history.

As we explore the echoes of time, we invite you to join us through the mysteries of Physics, from its fundamental principles to its transcendent implications.

Adding to this year's excitement, we proudly unveil Horizon, our departmental magazine, an anthology of groundbreaking ideas, insightful discussions, and the very essence of our collective curiosity. With a diverse lineup of events designed to challenge perspectives and ignite dialogue, Spectrum 2025 promises an experience as dynamic as *Time* itself.

We, the Department of Physics, extend our deepest gratitude to all participants and spectators who will join us in this pursuit of knowledge. Together, let's ride the waves and create ripples in the dimensions of Space and Time.



FOCUS AND OBJECTIVES



Being one of the most spectacular physics congregations of the city, our primary focus and objectives remain the following:

- To promote and kindle the spirit of inquisition through the pursuance of Physics by embracing it as an active philosophy of life.
- To present before the students and enthusiasts, trending topics of astrophysics, quantum physics, machine learning/AI climate change including the latest vogue created by atomic clock, in a lucid and enriching manner.
- To put to test, the aptitude of participants through various brainstorming competitions like chess, treasure hunt, Rubik's cube, quiz and to test and enhance their public speaking skills and penchant for research through paper presentation competition which go a long way to boost their scientific career.
- To help towards the betterment of the society by bolstering the organization skills of all those involved and training these young adults in unity, brotherhood, and philanthropy for in the words of Hellen Keller, "Alone we can do little; together we can do much."



DEPARTMENT OF PHYSICS





SPECTRUM 2024



**“WHERE IMAGINATION
MEETS REALITY”**



TEAM SPECTRUM



Convenor

- Abhinab Chandra

Co Convenor

- Udit Nag
- Jeremiah Mark Sutherland
- Agnipravo Debangshi

Core Committee Member

- Anushka Bhatta
- Aritra Ojha
- Arjun Sinha
- Megha Lahiri
- Meghna Santra
- Rik Raunaak
- Sanchari Sen
- Simon Snehashis Rozario
- Sirsha Dutta
- Trisha Khan
- Tiasha Singha

SCHOLARS' SPOTLIGHT

Paper Presentation

Newton defied gravity. Einstein bent time. Now, the stage is yours. Will your ideas send shockwaves through history or fade into oblivion? In this arena of intellect, only the bold can create ripples, do you dare to make your mark?



COUNTDOWN CONUNDRUM

Quiz



Think you and your partner have the brains of Sheldon and Amy? Bazinga! Prove it at Countdown Conundrum, the ultimate quiz battle. Let your mind sail across the waves of intriguing questions. Till then, the countdown begins...Tick Tock!

RUBIK'S RELICS

Rubik's Cube

A colourful maze, what's that..?

... A stunning Tesseract!

Grab the pieces, twist, shuffle, glide and boom!

And there you have, your ultimate Time Stone.



SECONDS TO CIPHER

Treasure Hunt



Sherlock Holmes unravelled the past with logic, while da Vinci painted the future with genius, one deciphered secrets, the other created them. Now, the chance is yours to cease. As time ticks away, will you chase the clues like a detective or carve your own path like a visionary?

CHECKING THE CLOCK

Chess

Can you handle the pressure like Gukesh and Pragg? In Checking the Clock, every move matters, from the Queen's Gambit to the final checkmate. Be the sorcerer of the black-and-white battlefield and claim what's yours before the clock's final breath!



ETERNAL INK-LINGS

Doodle and Sketch



Do you also have the talent to give countless dimensions to an eternally boring plane?

Get a pen and let the spontaneous symphony of lines create a micro-cosmos of your imagination



EVENTS



FREEZING THE FRAME

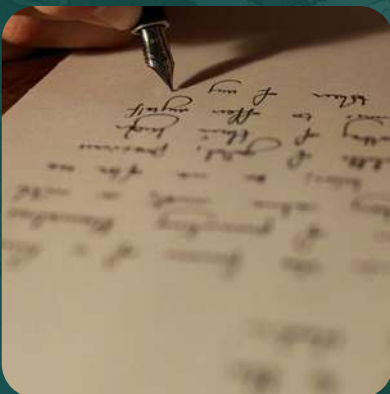
Photography

Some moments whisper, others roar, but the greatest ones refuse to fade. From the Mona Lisa's timeless gaze to a fleeting sunset, a single frame can outlive many decades. Will your shot cause a ripple or a tidal wave that reshapes history?



CLASSIC CHRONICLES

Creative Writing



Alternate realities, parallel timelines or may be a world where past, present and future intertwine..? Everything is possible in the realm of your imagination.

Bend the reality, mold it to your will and watch your mind, weave words into your countless worlds.



EVENTS



INTO THE ADDED TIME

E-Sports (PES)

When the clock runs out, does the story truly end? Legends are forged in the dying seconds, a single pass, a last-gasp strike, a heartbeat of brilliance can rewrite history. Channel your inner Messi or Ronaldo, because in football, as in time, the echoes of greatness never fade.



TIMELESS TAPESTRIES

Poster Making



Don't let time fade into ordinary, grab your stylus and create something extraordinary!

In Timeless Tapestries, transform your ideas into stunning posters that showcase your creativity. Let your art speak your inner voice and leave a lasting impression.



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SPECTRUM 2025

RIPPLES IN TIME

INAUGURAL ADDRESS

Rev. Dr. Dominic Savio, SJ
Principal
St. Xavier's College, Kolkata



SPEAKER SESSION

TITLE:
UNDERSTANDING BELL'S THEOREM IN A SIMPLE WAY



Prof. Guruprasad Kar
Professor
Physics and Applied Mathematics Unit,
Indian Statistical Institute, Kolkata.

TITLE:
YOUNG'S DOUBLE SLIT INTERFERENCE USING NON-CLASSICAL
SOURCE REVISITED IN THE LIGHT OF QUANTUM OPTICS

Dr. Sobhan Kumar Sounda
Assistant Professor in Physics
Presidency University, Kolkata



24TH MARCH, 2025
 10 A.M. ONWARDS
 FR. DEPELCHIN AUDITORIUM

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