The 4th DIMENSION

NEWSLETTER
DEPARTMENT OF PHYSICS
HALDIA GOVERNMENT COLLEGE

Wednesday,
May 29, 2024

Top News

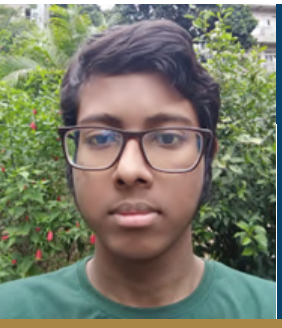
Subham Jana & Amaresh Jana of 6th Semester has been selected for integrated MSc PhD course at JNCASR, Bengaluru.

5th and 3rd semester toppers have secured 9.75 & 9.54 SGPA respectively.

Souvik Das, 2020 BSc, has joined CSIR-IICT, Hyderbad and Soumen Giri & Indrajit Mondal, both 2018 BSc, joined UGC DAE CSR Indore and NISER Bhubaneswar respectively.

The Department's Vision and Mission

To contribute for sustainable development of nation through achieving excellence in scientific education and research while facilitating transformation of students into responsible citizens and competent professionals.



Star News

Shubhasish Mallik
IISc, Bangalore
JAM 2021 AIR 66
JEST 2021 AIR 35
NET 2023 AIR 35

Subham Jana selected as TIFR-NIUS fellow in 2022.

Faculty Publication Highlights

Dr. Niladri Sekhar Mondal (Recognized as PhD Supervisor under Calcutta University

IOPscience Journals Books Publishing Support Login

Journal of Physics: Condensed Matter

PAPER

Electric field modulated electronic, thermoelectric and transport properties of 2D tetragonal silicene and its nanoribbons

Niladri Sekhar Mondal[1], Rajkumar Mondal[2], N Bedamani Singh[3], Subhadip Nath[4,6] and Debnarayan Jana[5]

Published 27 June 2024 • © 2024 IOP Publishing Ltd

Journal of Physics: Condensed Matter, Volume 36, Number 38

Focus Issue on Vibrational Properties and Their Implications to Two Dimensional Materials

Citation Niladri Sekhar Mondal *et al* 2024 *J. Phys.: Condens. Matter* **36** 385301

PCCP

ROYAL SOCIETY OF CHEMISTRY

PAPER

Check for updates

Cite this: *Phys. Chem. Chem. Phys.*, 2021, **23**, 11863

First-principles study of the optical and thermoelectric properties of tetragonal-silicene†

Niladri Sekhar Mondal,[a] Subhadip Nath,[*b] Debnarayan Jana[c] and Nanda Kumar Ghosh[d]

We report the optical and thermoelectric properties of the two-dimensional Dirac material T-silicene (TS) sheet and nanoribbons (NRs) by first-principles calculations. Both the optical and thermoelectric properties of TS can be modified by tailoring the sheet into nanoribbons of different widths and edge geometries. The optical response of the structures is highly anisotropic. A π interband transition occurs in the visible range of incident light with parallel polarization. The optical response for asymmetric arm-chair TS nanoribbons (ATSNRs) is larger than for symmetric ATSNRs. The absorptions of asymmetric ATSNR are redshifted due to a decrease in the bandgap with the width of the NRs. Plasma frequencies of the sheet and the NRs are identified from the imaginary part of the dielectric function and electron energy loss spectra curves. Thermoelectric properties like electrical conductivity, Seebeck coefficient, power factor, and electronic figure of merit are also studied. Compared with graphene, the TS sheet possesses a higher electrical conductivity and a better figure of merit. Among the NRs, asymmetric ATSNRs exhibit a better thermoelectric performance. All these intriguing features of TS may shed light on fabricating smart opto-electronic and thermoelectric devices.

Received 4th April 2021,
Accepted 26th April 2021

DOI: 10.1039/d1cp01466h

rsc.li/pccp

Newsletter Highlight

Our team participated in IIT Kharagpur space fest.
Our lectures available in YouTube channel.
Head of the Department is the program coordinator of the Career Guidance YouTube channel "The Uncertainty Principle".

Seminars and Webinars

29-04-2022: Seminar by Dr. Debnarayan Jana: "Quantum Inspired Nano Science"

02-07-2020, 04-07-2020 and 05-07-2020: International Webinar (Lecture Series) on "Nature: The Magnificent Mystery"

10-10-2021: Physics, Chemistry and Mathematics: The Subject and the Career

24-06-2021 & 25-06-2021: The PhD Panorama: A Beginner's Guide for Physics Students

13-09-2022 & 14-09-2022: Two Days Workshop on Robotics

Lockdown Diary

We carried out regular online mental health counselling of our students.

We used Google Classroom, Kahoot, Zoom and Google Meet for classes and sharing study materials.

We recorded our lectures via OBS software and uploaded in YouTube.

We conducted practical classes through online simulations.

Memorable Moments

The department organized a lab visit on 21-11-2022 to the Variable Energy Cyclotron Centre (VECC) Kolkata.

Departmental Highlights

Department provides rigorous training for competitive exams like JAM/ JEST etc.

Seminars and Webinars

Online আড্ডা with Rajibul Islam: Physics নিয়ে পড়াশুনো: https://www.youtube.com/watch?v=15R7fZHKra4&t=151s

Entrepreneurship in Post-covid Situation: জেনে নাও ব্যবসার অ-আ-ক-খ

Preparation Strategy of JAM (Phy & Chem): Achievers talk to you

Robotics Lab

Following the workshop on robotics, students engaged in various projects that were both fun and educational.

Memorable Moments

Our educational tour to Digha and surroundings was such fun!!!

Departmental Highlights

We hold special practice teaching classes by senior students for the junior students.

It's a family..

The teacher-student bonding and senior-junior bonding is very strong. From classroom benches to headaches of life, any issues, we are here!

Cricket match is a daily routine. Team has the great SG as captain!!

We have alumni whatsapp group. Once a HGCPhysics member, there's no farewell!

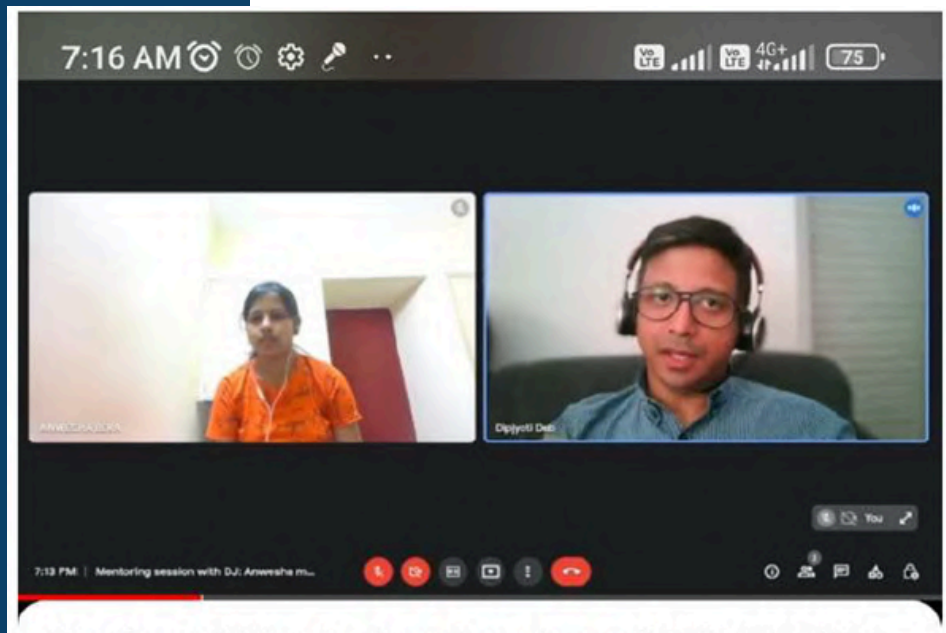
Robotics Lab

"FRIDAY" The Robot:
"Don't Touch My Eyes"

Chill time with Sir & Ma’am

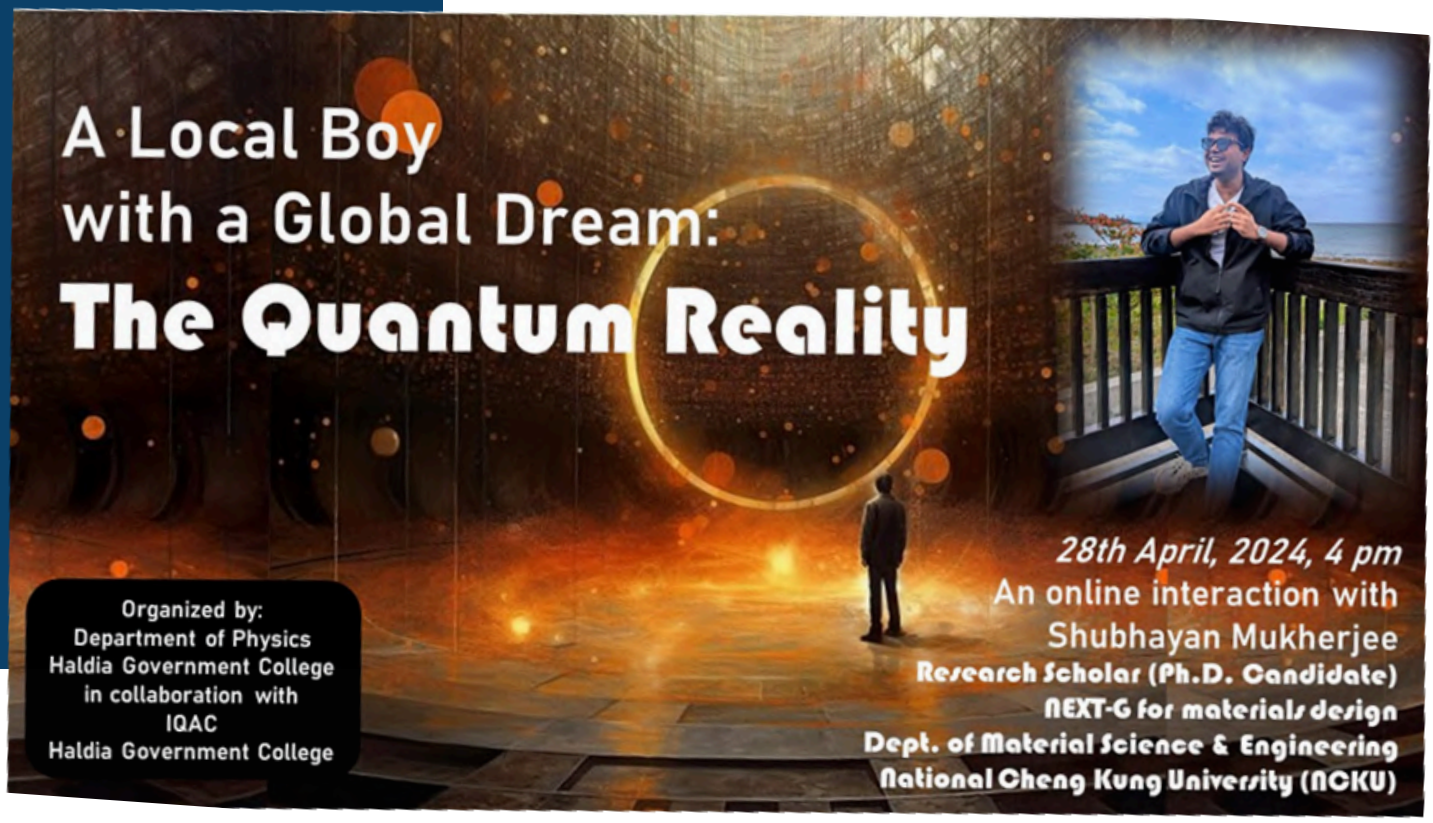
Learning is fun

Career Plan


7:16 AM
Students' Mentoring Session with DJ || PhD Abroad || The Uncertainty Principle
435 views 1 yr ago ...more
The Uncertainty Principle


10:59 AM
Prof. Debolina Das,...
Sabyasachi Mukho...
Prof. Tanmay Mait...
AI, Data Science & Machine Learning:
Sabyasachi Mukhopadhya
466 views 3 yr ago ...more
The Uncertainty Principle


HALDIA GOVERNMENT COLLEGE
Department of Physics & IQAC
organizes a discussion on:
Career Prospects
at
Bhaba Atomic Research Centre
আলোচনায়ঃ
Dr. Tapas Samanta
Scientific Officer H
Head, Computer Division
VECC, Kolkata
১০ মে, বিকেল ৪টে



Students participated in Art and Craft Contest 2024

If you can dream it,
You can achieve it

Way to go.. Team HGCPhysics..
More to come in near future!

Subham Jana
TIFR NIUS fellow
JAM 2024 AIR 682
JEST 2024 AIR 76

Amaresh Jana
JAM 2024 AIR 378
JEST 2024 AIR 330

Md. Shahnawaz
Wireless Operator
West Bengal Police
(Joined 2023)

Paromita Pramanik
GATE 2024 AIR
1132

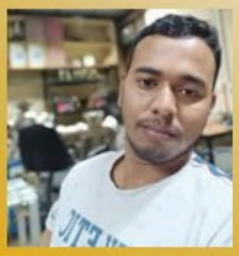
Souvik Das
GATE 2024 Qualified
Junior Research Fellow
CSIR-IICT, Hyderabad

Nayan Guchhait
JEST 2024 AIR 286

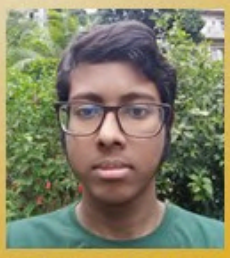
Pabitra Maity
Cyclotron Operator,
& QC Analyst
FDI Care Pvt. Ltd., Bangalore
(Joined 2024)

Swarup Kumar Dash
Assistant Teacher
The Renaissance
International School
(Joined 2022)

Indrajit Mondal
JEST 2022 AIR 203
GATE 2021 AIR 1118
Junior Research Fellow
NISER Bhubaneswar



Soumen Giri
GATE 2022 AIR 784
Junior Research Fellow
UGC DAE CSR, Indore



Shubhasish Mallik
Junior Research Fellow
IISc, Bangalore
JAM 2021 AIR 66
JEST 2021 AIR 35
NET 2023 AIR 110

Suman Singha Roy
Assistant System Engineer
Tata Consultancy Services
(Joined 2020)

Asim Kandar
JAM 2019 Qualified
MSc Kalyani University

Sucheta Ojha
JAM 2022 AIR 1559
MSc VIT

Sudipta Kuilya
JEST 2022 AIR 387
MSc Pashkura Banamali
College

Sourav Karan
NET 2019 AIR 245
Senior Research Fellow
IIT Kanpur

Madhusudan Bera
Sr. Engineer, Skipper Ltd.

Biswajit Mahapatra
Lecturer,
Contai Polytechnic College

Bahadur Dinda
Assistant Teacher
Pakurtala F.P. School, Kakdwip

Sayani Ponda Sarbadhikari
Lecturer
Global Institute of Science & Technology, Haldia

Rituparna Das
Assistant Primary Teacher
Kapaseria Sitala Primary School

Rajkumar Mondal
Ministry of Environment, Forest and Climate Change,
Government of India

Srabani Tung
Grameen Dak Sebak
Hatiberya PO, Purba Medinipur

Nikita Mukhia
Grameen Dak Sebak BPM
Todaygaon PO, Darjeeling

Subhajit Dhara
Assistant Teacher
Primary School

Priyanka Mahato
NIELSEN COMPANY (US)
Digital Analyst

Buddhadeb Samanta
Gram Rojgar Sahayak at
Saoraberia Jalpai II
Gram Panchayet

Chandranath Kajli
Assistant Engineer, IOCL

Anuva Pahari
Assistant Primary Teacher
Chaknan Milani Balika Vidyapith

Priyabrata Das
Project Engineer
National Digital Library of India
(NDLI)
IIT, Kharagpur

Swagatananda Senapati
Track Maintainer-3
South Eastern Railway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Google

Achievers Highlights

Subham Jana and Amaresh Jana, 6th Semester (2024) students, going to pursue Integrated MSc PhD in JNCASR, Bangalore.

Amaresh Jana also selected for integrated MSc PhD in NISER, Bhubaneswar.

Subham Jana working in TIFR NIUS project under Dr. Sudhindra Rayaprol, BARC, Mumbai.

Poulabi Maji (2023) pursuing MSc in IIT Dhanbad.

Shubhasish Mallik (2021), research scholar at IISc Bangalore, published paper in JHEP.

Indrajit Mondal (2018), research scholar at NISER, Bhubaneswar, published in Elsevier journal.

Sourav Karan (2017), Senior Research Fellow at IIT Kanpur, has 4 publications and 3 citations.

Competitive Calendar

2024

Subham Jana JEST AIR 76
JAM AIR 682
Amaresh Jana JAM AIR 378
JEST AIR 330
Paromita Pramanik GATE AIR 1132
Nayan Guchhait JEST AIR 286
Souvik Das GATE Qualified

2023

Poulabi Maji JAM AIR 525
Shubhasish Mallik CSIR NET AIR 35
Indrajit Mondal GATE AIR 651
Indrajit Mondal NET AIR 138
Soumen Giri JEST AIR 190

2022

Soumen Giri GATE AIR 784
Sucheta Ojha JAM AIR 1559
Sudipta Kuilya JEST AIR 387

2021

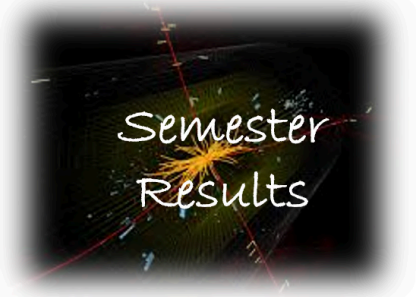
Shubhasish Mallik JAM AIR 66
JEST AIR 35

2020

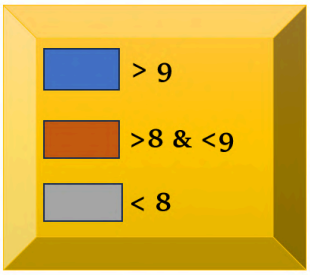
Sourav Karan JEST AIR 377

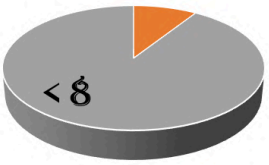
2019

Sourav Karan NET AIR 245
Asim Kandar JAM Qualified
Nayan Guchhait JAM Qualified



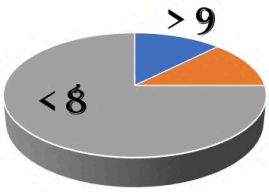
CGPA





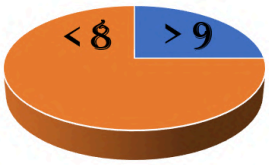
2019-20

Highest =8



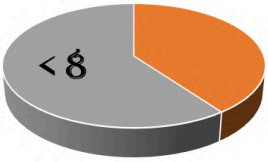
2020-21

Highest= 9.34



2021-22

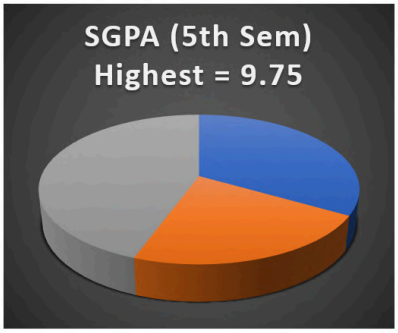
Highest = 9.21

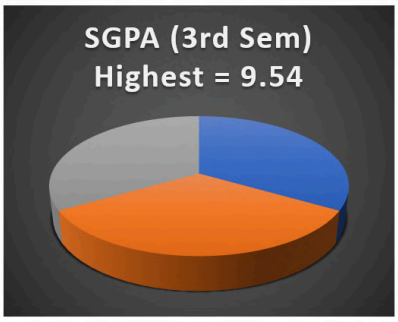


2022-23

Highest = 8.73

2023-24





Students' Seminar
26-07-2023. 03-01-2022 & 05-01-2022

18/20

Alumni Talks

Movie Show

19/20

Future Plan

- Outreach program in schools.
- Science exhibition on important events.
- Develop Robotics Lab further.
- Organize more lab visits.
- Increase no. of JAM/ JEST classes.