



Shiv Chhatrapati Shikshan Sanstha's
Rajarshi Shahu Mahavidyalaya, Latur
(Empowered Autonomous Institution)
Department of Physics and Electronics
A) A Summary Report of the Activity

1) Title of Programme:	Guest Lecture on "From Crystals to Nanostructures: Exploring the Fascinating World of Solid State and Nanophysics"			
2) Name of Organizing Department:	Physics and Electronics			
3) Name of the Coordinator(s)/ Convener(s)/ Organizer(s) of the Programme:	Dr Abhijit Yadav, HoD Miss Pratiksha Karpe, Teacher In-charge			
4) Date of the Programme:	Monday, 28 th September 2026; 12:30 PM			
5) Venue:	Hall No. 306			
6) Target Group:	UG I, II, III and PG I, II			
7) Number of Participants:		Male	Female	Total
A separate list with signatures be maintained in the department/Unit)	Teaching	03	06	09
	Non-Teaching	--	--	--
	Students	14	25	39
8) Name(s) and details of Resource Person(s), if any:	Dr. Vijendra A. Chaudhari Professor and Head, Department of Physics, Dayanand Science College, Latur			
9) Total Expenditure for the Programme:	₹ 1000			
10) Source of Funding:	Rajarshi Shahu Mahavidyalaya, Latur			

B) Report

i. Title: Guest Lecture on “From Crystals to Nanostructures: Exploring the Fascinating World of Solid State and Nanophysics”

ii. Introduction:

The Department of Physics and Electronics, organized a Guest Lecture on Monday, 28th September 2026. The lecture featured Dr Vijendra A. Chaudhari, Professor and Head, Department of Physics, Dayanand Science College, Latur, as the resource person. The programme was designed to introduce UG and PG physics students to cutting-edge developments in condensed matter physics, tracing the evolutionary path of materials science from traditional macro-crystalline systems to modern low-dimensional nanostructures.

iii. Objectives of the Guest Lecture:

- To develop conceptual clarity regarding crystal lattices, unit cells, symmetry, and band theory in solid-state physics.
- To introduce students to nanophysics, quantum size effects, and lower-dimensional material structures.
- To highlight historical milestones in materials science, connecting ancient Indian knowledge traditions to modern nanotechnology.
- To demonstrate state-of-the-art characterization tools (AFM, STM, Optical Tweezers) and real-world technological applications.

iv. Details of Participants:

A total of 48 participants, comprising 17 male and 31 female participants, including faculty members and students attended the guest lecture.

v. Brief Summary of the Guest Lecture

HoD Dr Abhijit Yadav delivered the welcome address and presented the concept note outlining the significance of expert guest lectures in contemporary physics education. Prof. Pratiksha Karpe introduced the Resource Person, Dr Vijendra A. Chaudhari. Dr Chaudhari was warmly felicitated by HoD Dr. Abhijit Yadav on behalf of the institution. In his comprehensive address, Dr Chaudhari explained the physics of materials starting from gaseous, liquid, solid, and liquid-crystal states. He detailed the intermolecular binding forces in solids and explained single crystals, polycrystalline

materials, translation vectors, lattice points, primitive and non-primitive unit cells. He elaborated on the 7 crystal systems, 14 Bravais lattices, and atomic packing fractions, using the hexagonal structure of quartz as an illustrative example.

Tracing the historical timeline of material evolution through the Stone, Copper, Bronze, Iron, Ceramic, Silicon, and Nanotechnology Ages, Dr Chaudhari drew fascinating parallels with ancient Indian knowledge traditions, including Ayurveda, Bhaskarization (भस्मीकरण), and therapeutic colloidal gold. Quoting Richard Feynman's landmark concept 'There's Plenty of Room at the Bottom', he discussed advanced characterization tools such as AFM, STM, and Optical Tweezers. He illustrated optical nanoparticle properties using the historic Lycurgus Cup.

Furthermore, Dr Chaudhari explained Quantum Size Effects and low-dimensional architectures including Quantum Dots (0D), Quantum Wires (1D), Quantum Tubes/Nanotubes, and Graphene (2D). He outlined Top-Down and Bottom-Up synthesis methodologies and emphasized the convergence of Physics, Chemistry, and Biology.

The session was anchored by Miss Charushila Kalam. The formal vote of thanks was proposed by Prof. Rupali Katkar. Principal Dr Mahadev Gavhane extended guidance and encouragement for the event.

Additionally, the event was attended by faculty members including Prof. Mayuri Hawaldar; Prof. Vishakha Patil; Prof. Harshad Dalve; Prof. Harshada Nalage; Mrs. Rupali Katkar; Mr. Mahesh Balwade; Dr Shilpa Patange; Shri Amar Bhoirwad; Shri Rajkumar Lokhande; and Shri Shyam Chochande.

vi. Conclusion and Future Outlook

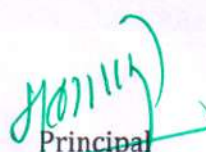
The guest lecture successfully bridged fundamental solid-state concepts with cutting-edge nanophysics applications. It broadened students' scientific horizons and motivated them toward competitive examinations, higher studies, and research careers in nanoscience.

vii. Any Appendix If Necessary: List of students

Date: September 30, 2026

Place: Latur


HoD
HEAD
Department of Physics & Electronics
Rajarshi Shahu Mahavidyalaya, Latur
(Autonomous)


Principal
PRINCIPAL
Rajarshi Shahu Mahavidyalaya³
(Autonomous), Latur

C) Geotagged Photographs:

 Latur, Maharashtra, India 🇮🇳 13, Rajarshi Shahu College, Jay Nagar, Sawe Wadi, Latur, Maharashtra 413512, India Lat 18.398317° Long 76.57991° Monday, 28/09/2026 12:50 PM GMT +05:30	 Latur, Maharashtra, India 🇮🇳 13, Rajarshi Shahu College, Jay Nagar, Sawe Wadi, Latur, Maharashtra 413512, India Lat 18.398298° Long 76.579914° Monday, 28/09/2026 12:46 PM GMT +05:30
Miss Pratiksha Karpe introducing the Resource Person	Dr Chaudhari was felicitated by HoD Dr Abhijit Yadav on behalf of the institution.
 Latur, Maharashtra, India 🇮🇳 13, Rajarshi Shahu College, Jay Nagar, Sawe Wadi, Latur, Maharashtra 413512, India Lat 18.398358° Long 76.5799° Monday, 28/09/2026 12:47 PM GMT +05:30	 Latur, Maharashtra, India 🇮🇳 13, Rajarshi Shahu College, Jay Nagar, Sawe Wadi, Latur, Maharashtra 413512, India Lat 18.398339° Long 76.579883° Monday, 28/09/2026 01:07 PM GMT +05:30
Dr Abhijit Yadav, HoD, delivering the concept note.	Dr Vijendra A. Chaudhari delivering the Guest Lecture.
 Latur, Maharashtra, India 🇮🇳 Bus Stand, 2, Subhash Chowk Rd, Near Gandhi Chowk, Jay Nagar, Sawe Wadi, Latur, Maharashtra 413512, India Lat 18.398842° Long 76.57975° Monday, 28/09/2026 12:58 PM GMT +05:30	 Latur, Maharashtra, India 🇮🇳 Bus Stand, 2, Subhash Chowk Rd, Near Gandhi Chowk, Jay Nagar, Sawe Wadi, Latur, Maharashtra 413512, India Lat 18.399095° Long 76.579829° Monday, 28/09/2026 02:09 PM GMT +05:30
Student participants of the Guest lecture	Prof. Rupali Katkar expressing the vote of thanks

D) Notice of the Guest Lecture:



Shiv Chhatrapati Shikshan Sanstha's
Rajarshi Shahu Mahavidyalaya, Latur
Empowered Autonomous Institution
Department of Physics and Electronics
Notice: Guest Lecture

Date: 24-09-2026

All the students of UG-I, B.Sc. Physics I, II, III and M.Sc. Physics I, II are hereby informed that the Department of Physics and Electronics is organizing the Guest Lecture of **Dr. Vijendra A. Chaudhari**, Professor and Head, Department of Physics, Dayanand Science College, Latur on the topic **"From Crystals to Nanostructures: Exploring the Fascinating World of Solid State and Nanophysics"**.

It is compulsory for all students to attend the programme and benefit from the valuable guidance and interaction with the distinguished guest.

Date: **Monday, September 28, 2026**

Time: **12:30 PM**

Venue: **Hall No. 306**


HEAD
Department of Physics & Electronics
Rajarshi Shahu Mahavidyalaya, Latur
(Autonomous)


Principal
PRINCIPAL
Rajarshi Shahu Mahavidyalaya, Latur
(Autonomous)

E) Banner of the Guest Lecture:

Shiv Chhatrapati Shikshan Sanstha's
Rajarshi Shahu Mahavidyalaya, Latur
Empowered Autonomous Institution
Department of Physics and Electronics

Guest Lecture

Topic :
**From Crystals to Nanostructures:
Exploring the Fascinating World of
Solid State and Nanophysics**

Guest Speaker
Dr. Vijendra A. Chaudhari
Professor and Head,
Department of Physics,
Dayanand Science College, Latur

Presided by
Dr. Mahadev Gavhane
Principal
Rajarshi Shahu Mahavidyalaya, Latur

*All the students of UG-I, B.Sc. Physics I, II, III
and M.Sc. Physics I, II are cordially invited.*

Monday, September 28, 2026 | 12:30 PM | Hall No. 306

Organized by
Dr Abhijit Yadav
HoD, Physics and Electronics | Miss Pratiksha Karpe
Teacher incharge



Shiv Chhatrapati Shikshan Sanstha's
Rajarshi Shahu Mahavidyalaya, Latur
(Empowered Autonomous Institution)
Department of Physics and Electronics

Guest Lecture on the Topic: From Crystals to Nanostructures: Exploring
the Fascinating World of Solid State and Nanophysics

Date: 28.09.2026

Time: 12.30 PM

Sr. No.	Name	Gender	Class	Signature
1.	Sayyed Misbah Taher	Female	BSC.Ty	Misbah
2.	Surge Bhagyashri Laxman	—	M.sc sy	Bhagyashri
3.	Birajdar sneha Anil	—	—	Sneha
4.	Deshmukh Suhani vijinath	—	—	Suhani
5.	Kumarkiri Shaista Hussain	—	Msc.sy	Shaista
6.	Gitte Vaishnavi Ramkishan	—	—	Vaishnavi
7.	Patil Samiksha Sanjay	—	BSC.FY	Samiksha
8.	Kale Ishwari shivraj	—	Bsc.fy	Ishwari
9.	Maske shraddha Vinayak	—	Bsc.Fy	Shraddha
10.	Shindebone shraddha Govind	—	B.A.fy	Shraddha
11.	Pandge shraddha Kishor	female	B.A.FY	Shraddha
12.	Banapur e Dnyaneshwari Dhanaji	female	B.A.FY	Dnyaneshwari
13.	Shembare Anshi Eknath	female	B.A.Fy	Anshi
14.	Jadhav Sandhya Dnyanoba	—	—	Sandhya
15.	Shinde Mamta Prakash	—	B.A.FY	Mamta
16.	Chakre Sanchita Maruti	—	B.A.FY	Sanchita
17.	Sayyed Sadaf Farukh	—	B.A.fy	Sadaf
18.	Sayyed Saniya Khayyum	—	B.A.f.y	Saniya
19.	Makne Rutuja Limbraj	female	Bsc sy	Rutuja
20.	Ghangapure Priya Madhav	female	Bsc sy	Priya

21.	Mrunmai Rajkumar Ghuge	Female	B.Sc.B.Y.	~~Mrunmai~~
22.	Trupti Ramdas Wangwad	Female	M.Sc.F.Y	~~Trupti~~
23.	Maske Purna Tukaram	Female	M.Sc.F.Y	~~Maske~~
24.	Bhadke Shesaddha Hanumanant	Female	B.Sc.III	~~Shesaddha~~
25.	Kalshetti Santosh Jankumar	Male	M.Sc.F.Y	~~Santosh~~
26.	Ghaikh Md. Zaid Sharifa	Male	B.G.C.I ^{yr}	~~Zaid~~
27.	Ganesh Sheshrao Mature	Male	BSC.II	~~Ganesh~~
28.	Zambare Sumit M.	Male	BSC-I	~~Sumit~~
29.	Pathan Zainulabed	Male	BSC.I ^{yr}	~~Zainulabed~~
30.	Shinde Nikhil	Male	B.P.F.Y	~~Nikhil~~
31.	Lokhande Ashish	Male	B.A.F.Y.	~~Ashish~~
32.	Gajile Dinesh Sadanand	Male	B.A.F.Y	~~Dinesh~~
33.	Swapnil Mahadhar Kamble	Male	B.A.F.Y	~~Swapnil~~
34.	Santosh Madhukar Chavwad	Male	B.A.F.Y	~~Santosh~~
35.	Pedate Rushikesh Prantap	Male	BSC.F.Y.	~~Rushikesh~~
36.	Ghar Pranav Devidas	Male	BSC.F.Y.	~~Pranav~~
37.	Shaikh Rihan Shafiyoddin	Male	BSC.F.Y	~~Rihan~~
38.	Burbure Rushikesh Satyanan	Male	M.Sc.I	~~Rushikesh~~
39.	Kalam Charushila Ravindra	Female	M.Sc.II	~~Charushila~~
40.	Dr. Shilpa S. Patange	Female	Asst. Prof.	~~Shilpa~~
41.	Miss M.V. Hawaldar	Female	Asst. Prof.	~~M.V.~~
42.	Maresh Balaji Balwade	Male	Asst. prof.	~~Maresh~~
43.	Miss Vishakha B. Patil	Female	Asst. prof	~~Vishakha~~
44.	Miss Harshada S. Nalge	Female	Asst. Prof	~~Harshada~~
45.	Miss. Pratiksha M. Kozre	Female	Asst. prof	~~Pratiksha~~
46.	Mr. Harshad Narayan Dalve	Male	Asst. prof	~~Harshad~~

47.	Rupali Kattkar	f	Ass. Prof	Prof.
48.	Dr. A.A. Yadav	M	Prof.	Asst. Prof.
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55.	HEAD			
56.	Department of Physics & Electronics Rajarshi Shahu Mahavidyalaya, Latur (Autonomous)			
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