

KHARAGPUR COLLEGE

Inda, Kharagpur, Paschim Medinipur, West Bengal, India, 721305



National WEBINAR

On

Advancement of Plasma Physics and Nanoscience

Organised by

The Department of Physics

30th June, 2020 10.30 am onwards

Resource Persons



Dr. Mukti Ranjan Jana
Scientific Officer - G
Neutral Beam Injection Group
Institute for Plasma Research
Gandhinagar



Dr. Pintu Bandyopadhyay
Associate Professor
Institute for Plasma Research
Gandhinagar, Gujarat



Dr. Kuntal Chatterjee
Assistant Professor
Department of Physics
Vidyasagar University
Midnapore - 721102



Dr. Samir Kumar Giri
Assistant Professor
Department of Physics
Kharagpur College
Kharagpur - 721305



Dr. Sanjib Sarkar
Assistant Professor
Department of Physics
Alipurduar College
Alipurduar - 736122

Registration is free and open from 24th June 10.00 am up to 29th June 10.00 pm

Link for registration: <https://forms.gle/ngy5mtqLULePUfZ78>

E certificate will be provided through registered e-mail within one week from the webinar.

Organising Committee

Chairman

Dr. Bidyut Samanta
Principal, Kharagpur College

Patron in Chief

Prof.(Retd) Anjan Chaki
President, Governing Body
Kharagpur College

Organizing Secretary

Dr. Ritwik Saha,
Assistant Professor & Head,
Department of Physics, Kharagpur College

Convener

Dr. Jyotirmoy Pramanik
Associate Professor, Department of Physics
Kharagpur College

Jt. Secretary: Sri Debasish Aich, Assistant Professor, Department of Physics, Kharagpur College

Jt. Secretary: Dr. Tanika Kar, Assistant Professor, Department of Physics, Kharagpur College

Jt. Convenor: Sri Rudra Narayan Mondal, Assistant Professor, Department of Physics, Kharagpur College

Members : Dr. Samir Kumar Giri, Sri Mihir Das, Assistant Professor, Department of Physics, Kharagpur College
Smt. Parbati Basu, Sri Pankaj Patra, Guest Teacher, Department of Physics, Kharagpur College

Important information & links

Participants are requested to join the webinar through the you tube link :

<https://youtu.be/dLmMzJ5LcY8>

registered participants willing to get E certificates are required to fill up feedback form to be provided at the end of the webinar

E certificates will be provided through registered e-mail within one week from the webinar.

For more information contact webinarphysics2020@gmail.com ph no : 7003659637, 8670030318

For updates please join the WhatsApp group via the link:<https://chat.whatsapp.com/HKQFCIDKdEW9auwvfchRUI>

Programme Schedule

30th June, 2020

Inaugural Session

Time	
10.30-10.40	Welcome address by Dr. Jyotirmoy Pramanik, Associate Professor, Department of Physics & Convener, Webinar organising committee
10.40-10.50	Inaugural speech by Dr. Bidyut Samanta, Principal, Kharagpur College & Chairman of the Webinar organising committee
10.50-11.00	Speech by Prof. Anjan Chaki, President, Governing Body, Kharagpur College & Patron in Chief, Webinar organising committee


Technical Session

	Topic of lecture	Speaker
11.00-11.45	Lecture-I Physics & Technology of Ion Acceleration System for Fusion Research.	Dr. Mukti Ranjan Jana Associate Professor, Homi Bhabha National Institute (HBNI) Scientific Officer – G, Institute for Plasma Research, Gandhinagar
11.45-12.30	Lecture-II Physics of Dusty Plasmas: Recent Experiments	Dr. Pintu Bandyopadhyay Associate Professor, Institute for Plasma Research, Gandhinagar
12.30-13.15	Lecture-III Decreasing Dimensionality – Increasing Functionality: A step to Care our Environment.	Dr. Kuntal Chatterjee Assistant Professor, Department of Physics, Vidyasagar University
13.15- 14.00	Lecture-IV Magnetism at the Nanoscale Level	Dr. Samir Kumar Giri Assistant Professor, Department of Physics, Kharagpur College
14.00-14.45	Lecture – V Quantum Mechanics: Origin to Nanoscience	Dr. Sanjib Sarkar Assistant Professor, Department of Physics, Alipurduar College
14.45-15.00	Vote of thanks by Dr. Ritwik Saha, Assistant Professor & HOD Physics & Secretary, Webinar organising committee	

Browser tabs: (10) WhatsApp, (215 unread) - iqac@kharagpur..., Download file | iLovePDF, Kharagpur College, 23282National WEBINAR on R..., Advancement of Plasma Physic...

youtube.com/watch?v=dLmMzJ5LcY8

Search



Top chat replay

- Minaral Saikh Good Morning to all 🙏🙏🙏
- Parbati Basu Hello
- Puspendu Kulla PUSPENDU KULLA, good morning
- Sk Md Samiuddin Hlw
- Prakash Barik Very good morning to all
- Anand Srivastava good morning
- Indrani Chakraborty Good morning and welcome to the webinar of Kharagpur College
- Prakash Barik tq
- pankaj patra good morning everyone.
- SINDHU TILAK Good Morning everyone
- SHATISH KUMAR GAUTAM Good morning
- Megha Chowdhury gd mng
- Anjali. tiku 😊
- Sanhita Paul Good Morning all.
- Subhajit Manna Subhajit Manna is here
- USHASI Dutta good morning
- TRISHA KHAN Good morning
- Dibya Das very good morning
- Laxminaryana Munigala GOOD MORNING EVERYBODY
- Gistane Mirasol Angalot Good morning!

Advancement of Plasma Physics and Nanoscience by Department of Physics

Kharagpur College 1.5K subscribers


2.2K views Streamed 3 years ago

Windows taskbar: Type here to search, National We..., Screenshots, 3.2.2 Docs, National We..., Advancement..., Physics Webin..., 3.2.2_SSR Final..., Photos, 34°C, 12:20 PM, 6/26/2024

Browser tabs: (11) WhatsApp, (215 unread) - iqac@kharagpu..., Download file | iLovePDF, Kharagpur College, 23282National WEBINAR on R..., Advancement of Plasma Physic...

youtube.com/watch?v=dLmMzJ5LcY8

Search



Top chat replay

- Subhajit Dash good morning everyone
- Sravankumar Kota Hi
- Soumen Maity Good morning everyone. I am Soumen Maity from West Bengal, India.
- Sourav S Sravankar Good morning
- Sravankumar Kota Good Morning
- KOUSHIK GAYEN good morning everyone
- Raj Surya 17 Good morning sir
- Bikram Das GOOD MORNING 🙏
- Anish Chakraborty Good morning everyone
- Purba Pahari gd morning... Purba Pahari, PG student, MSc in Zoology from Vidyasagar University, purbapaharir@gmail.com
- Ashok Banerjee good morning
- DILIP MAITY good morning everyone
- Mae Ornan Good afternoon!
- SREYA SASMAL Good morning everyone
- pankaj patra it has stopped
- Prakash Barik Good morning everyone.Prakash Barik,Japur Odisha, studying mechanical engineering in Gandhi Institute Of Excellent Technocrats, Ghangapatna,Bbsr
- pankaj patra It's ok
- Pijush Kanti Gan Good Morning Str....

Advancement of Plasma Physics and Nanoscience by Department of Physics

Kharagpur College 1.5K subscribers

2.2K views Streamed 3 years ago

Windows taskbar: Type here to search, National We..., Screenshots, 2020-21, Chemistry, Advanceme..., Physics Web..., 3.2.2_SSR fn..., Photos, Report 1707..., 34°C, 12:23 PM, 6/26/2024

Advancement of Plasma Physics and Nanoscience by Department of Physics

Fusion

Advantage

- No pollution
- Fuel is abundant
- Suitable for large scale production

${}^2\text{H}_1 + {}^3\text{H}_1 \rightarrow {}^4\text{He}_2 + n_0 + 3.27\text{MeV}$ (D-Dn)
 ${}^2\text{H}_1 + {}^3\text{H}_1 \rightarrow {}^4\text{He}_2 + {}^1\text{H}_1 + 4.03\text{MeV}$ (D-Dp)
 ${}^2\text{H}_1 + {}^3\text{H}_1 \rightarrow {}^4\text{He}_2 + n_0 + 17.59\text{MeV}$ (D-T)
 ${}^2\text{H}_1 + {}^3\text{He}_2 \rightarrow {}^4\text{He}_2 + {}^1\text{H}_1 + 18.3\text{MeV}$ (D-He)

D-T fusion need ~ 10 keV Temperature where 1 eV = 11600 K

High temperature can be produced in Tokamak Plasma

Source: Deuterium (D): Sea water
Tritium (T): ${}^6\text{Li}_3 + n_0 \rightarrow {}^4\text{He}_2 (2.05\text{MeV}) + {}^3\text{H}_1 (2.75\text{MeV})$

Advancement of Plasma Physics and Nanoscience, 30th July 2020, Kharagpur College, West Bengal

2.2K views Streamed 3 years ago

Advancement of Plasma Physics and Nanoscience by Department of Physics

Dust grain charging

Ions
Electrons

Electrically floating grain = 0

$$I_i + I_e + I_{\text{sec}} + I_{\text{pe}} + I_{\text{th}} = 0$$

grain floats to a potential at which $\Sigma I = 0$

Lecture 2: Image Classification pipeline

Advancement of Plasma Physics and Nanoscience by Department of Physics

2.2K views Streamed 3 years ago

YouTube video player interface showing a lecture titled "Electrocatalytic CO₂ Reduction Reaction : Different possibilities.....". The video is presented by Kuntal Chatterjee Faculty, Physics, Kharagpur College. The main content displays a diagram of an electrocatalytic CO₂ reduction reaction, showing various products and their corresponding electron transfer numbers (e⁻):

- 2e⁻ → H₂O₂
- 2e⁻ → CH₂O
- 4e⁻ → CH₃OH
- 6e⁻ → CH₃CHO
- 8e⁻ → CH₄
- 12e⁻ → CH₃CH₂OH
- 12e⁻ → CH₃CH₂CH₃
- 14e⁻ → C₂H₆
- 18e⁻ → C₂H₅OH

The video also mentions "Challenges: Selectivity Efficiency and Durability". The video player shows 2.2K views, streamed 3 years ago. The channel is Kharagpur College, 1.5K subscribers.

Top chat replay:

- Anjali: thank you sir
- Ananya Nandi: where is the feedback link?
- Prakash Barik: how can we remove line defect created in dusty plasma
- Roschelle Zamora: Thanks so much po
- Roschelle Zamora: Maraming salamat po for a very informative webinar
- Rajkumar Gupta: Thanks for nice presentation.
- Creations by BHATTACHARJEE: Thank you very much for such an informative and elaborate presentation.
- MSK006: feedback link please
- Milan De: very informative discussion.
- Tomas Ganiron Jr., PhD: FEEDBACK LINK
- swapan kamliya: welcome sir
- Dipankar Ghosh: thank, good presentation
- AmlanRayasingh: what's the timing of the webinar
- PIJJA MAJEE: does OD means to restrict the motion and keep it rest?
- MSK006: Webinar duration?
- Prakash Barik: can we use nano technology for modification of robot
- Rajkumar Gupta: How longer this webinar go?
- Dodot Diaz: I guess if I'm not mistaken 3 hrs?
- PIJJA MAJEE: this webinar will go upto 3:00pm

YouTube video player interface showing a lecture titled "Ferromagnetism". The video is presented by Samir Giri, Kharagpur College. The main content displays a diagram of ferromagnetism, showing the alignment of magnetic moments and the hysteresis loop.

Characterized by a very strong attraction to a magnetic field, and frequently by the material having a memory of being in a magnetic field. Domains also explain hysteresis, and the notion of magnetic memory:

Important terms associated with ferromagnetic hysteresis:

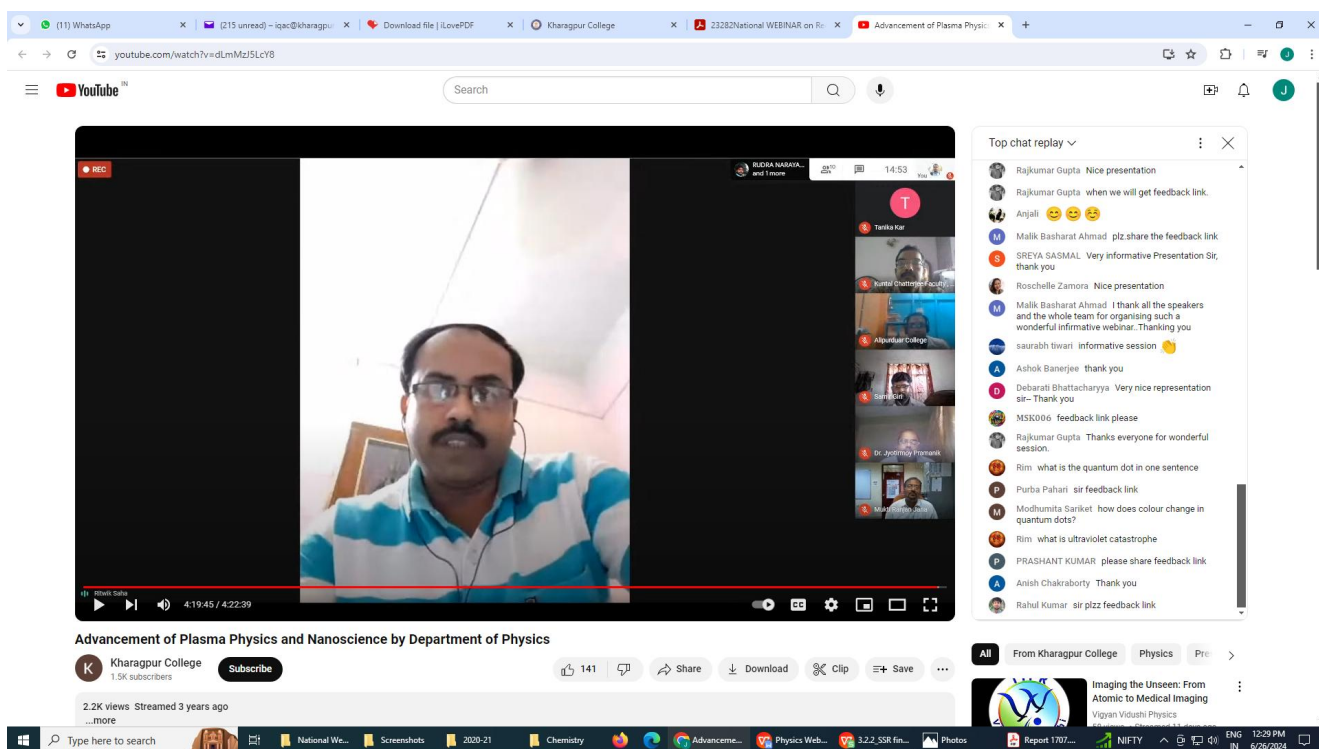
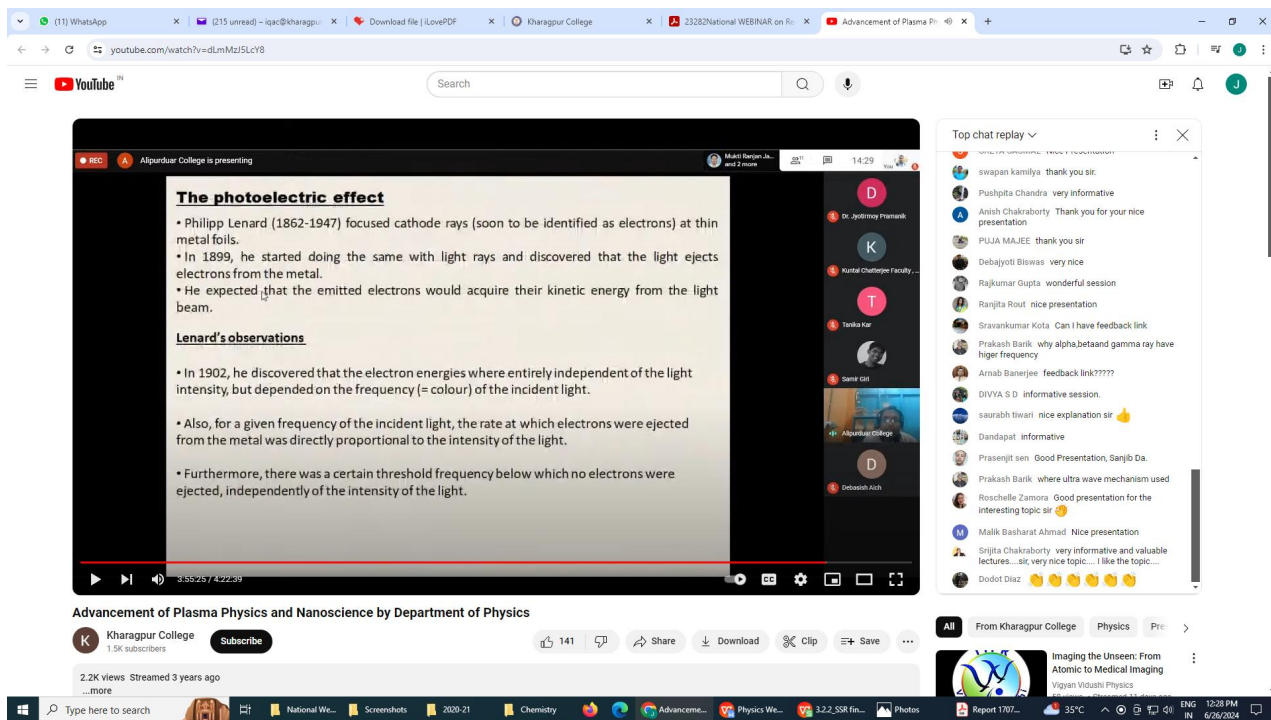
- Remanence M_R
- Coercivity H_C

Domain wall motion nucleation Spin rotation (coherent incoherent)

The video player shows 2.2K views, streamed 3 years ago. The channel is Kharagpur College, 1.5K subscribers.

Top chat replay:

- swapan kamliya: thank you sir.
- Anish Chakraborty: Thank you
- Milan De: thank u sir.
- Milan De: welcome sir
- Anjali: thank you sir
- Shirin Vemuri: how to get certificate
- Srijita Chakraborty: very impressive lectures
- Roschelle Zamora: 🙌🙌🙌
- Malik Basharat Ahmad: very impressive
- Meraj Rizvi: nice presentation sir
- Prakash Barik: which magnetism we used made more attractive nano material micro or macro nano technology
- Anjali: yes sir
- Srijita Chakraborty: very valuable lectures
- Prakash Barik: Use of giant magnetoresistance in nano science level?
- alhoire: although is is quite long but this is very informative.
- SK SAMIM MAHAMMAD: nice sir
- Rajkumar Gupta: Nice presentation
- DILIP MAITY: DILIP MAITY, KHEJURI COLLEGE
- Prakash Barik: which temperature is more in nano technology (diamagnetism/paramagnetism)



Few screenshots of the Webinar held on 30.06.2020

Report

National WEBINAR

On

Advancement of Plasma Physics and Nanoscience

Organised by

The Department of Physics

30th June, 2020

Department of Physics, Kharagpur College has organised a one-day national Level webinar on “Advancement of Plasma Physics and Nanoscience ” on 30th June 2020. The webinar generated huge response among the students, faculty members, technical professionals and scientists in India and abroad. As good as 1191 participants have registered in the webinar, out of these, (415) from different college and University of West Bengal, (446) from different states of India, mostly from all the states. More than (330) are from abroad mostly from Bangladesh, Pakistan, Nepal, Philippines, Thailand, Myanmar, Indonesia, Malaysia. Dr. Jyotirmoy Pramanik, convener of the webinar organizing committee, extended a very warm and hearty welcome to all the participants.

Dr. Muktiranjana Jana, Scientific Officer G, Neutral Beam Injection Group, Institute for Plasma Research and Dr Pintu Bandyopadhyay, Associate Professor, Institute for Plasma Research, the resource persons, were virtually present and delivered a talk on recent research, development and experiments on Plasma Physics in India in the webinar.

Dr. Kuntal Chatterjee, Assistant Professor, Department of Physics, Vidyasagar University, was also with us to present his recent research works on “Nanoscience: A step to care our environment”.

We have also two young and enthusiastic faculty as resource persons.

Dr. Samir Kumar Giri, Assistant Professor, Department of Physics, Kharagpur College presented his research experiences on magnetism in the Nanoscale level.

Dr. Sanjib Sarkar, Assistant Professor, Alipurduar College have also join with us, to share his research and teaching experiences.

All the resource persons of this webinar showed their commendable performance in the field of Plasma physics and Nanoscience from time to time. They are kind enough to remain present among us today, in the webinar. We are true sense thankful to them.

E certificates were provided to the all participants through registered e-mail. The webinar was conducted in google meet, and the whole webinar was streamed live through you tube link: <https://youtu.be/dLmMzJ5LcY8>. At the end, Dr. Ritwik Saha, HOD, Physics expressed vote of thanks to the speakers, organising committee members and to the participants.