

Report on
“1st International e-Conference on Recent Advances in Physics & Materials Science-2020 (IC-RAPMS-2020)”

July 9 - 10, 2020 (10:00 AM- 02.00 PM, IST)

Organized by:-

Kurseong College, Darjeeling, West Bengal, India 734203

in collaboration with

St. Joseph’s College, Darjeeling, West Bengal, India-734104

A two-day “International e-Conference on Recent Advances in Physics & Materials Science-2020 (IC-RAPMS-2020)” was organized by Kurseong College, Darjeeling, West Bengal, India 734203 in collaboration with St. Joseph’s College, Darjeeling, West Bengal, India-734104 and technical partner Condensed Matter Physics Research Centre, Butwal, Nepal-11 on 9th July & 10th July, 2020 hosted on Zoom Meeting. The aim of this e-conference was to outreach of science for better communication between broader public and scientific community. Keeping this in mind, in this conference we invited experts from different fields of physics from all over the world. Besides, this event is also aimed to give some exposures to young students, research scholars, academicians, scientists, faculty members, post-graduate students, R & D Wing in industries working in the different fields of physics and advanced materials and have the fruitful interaction among the participants and experts to promote and popularize the advances of physics and applications in the present situation. Taking the enormity of physics into consideration, the seminar consisted of a variety of sub-themes. A large number of eminent physicists, scholars in physics from all over the world responded to Dr. Amit Shankar’s invitation in this e-conference and made it successful. Participants from across the country and abroad contributed papers for oral and poster presentations. A registration link was provided in the advertisement for the registration of participants and the submission of their oral presentation abstracts/papers in PDF format. Regarding registration procedure and important dates was given as follows:

Important Dates: (Last Date)

Submission of Abstract & Registration: 4th July, 2020

Intimation to participants: 5th July, 2020

Registration for presentation: 7th July, 2020

For smooth communication among the organizing committee and the participants a whatsApp group had been opened and all the participants had also been joined to the whatsApp group for upcoming notifications.

Organizers

The organizing committee was formed with the following sub-committees and the members are as follows:

Patrons:

Dr. Samir Bal, Principal, Kurseong College, Kurseong

Fr. Dr. Donatus Kujur, Principal, St. Joseph's College, Darjeeling

Convener:

Dr. Amit Shankar , Assistant Professor, Department of Physics, Kurseong College

Co-Convener:

Dr. Himanshu Joshi, Assistant Professor, Department of Physics, St. Joseph's College, Darjeeling

Technical Committee:

Mr. Manabindu Das, Assistant Professor, Department of Physics, Kurseong College & Mr.

B.K. Rai, Assistant Professor, Department of Zoology, Kurseong College

Advisory Committee

Prof. P.K. Mandal, University of North Bengal, India

Prof. A. Saxena, North Eastern Hill University, India

Prof. P.K. Patra, North Eastern Hill University, India

Dr. S. Tamang, Sikkim University, India

Dr. A. E. Aly, El Salam Hig. Inst. for Eng. & Tech., Egypt

Prof. (Retd.) R.K. Thapa, Mizoram University, India

Prof. R. Khenata, Université de Mascara, Mascara, Algeria

Prof. S. Bin Omran, King Saud University, Saudi Arabia

Dr. R. Sharma, CBPBU, Cooch Behar India

Dr. H.P. Jaishi, University of Science & Technology, India

Theme of the Seminar:

The abstracts were collected from the different branches of the physics covering the following areas:

Energy Materials, Nano and Biomaterials & Applications, Crystal Growth & Applications, Organic & Inorganic material, Magnetic Materials and Spintronics, Solar Energy, Thin Films Mathematical Modeling, Liquid Crystal & Solar cell, Soft Condensed Matter, Particle and Nuclear Physics, Astrophysics and Space Research, Polymers and Composite Materials
 Total of 13 invited speakers 1 keynote address and 94 contributory speakers shared their research work with the audience strength of more than 200.

List of speakers

| Sl. No. | Name | Institute/University | Title of Talk |
|---------|------------------------------|---|---|
| 1. | Prof. V. Madhurima | Central University of Tamil Nadu, India | Droplets: Properties and Relevance to COVID -19 |
| 2. | Dr. D.P. Rai | Pachhunga University College, India | Thermoelectric properties of Heusler alloys |
| 3. | Dr. M.P. Ghimire | Tribhuvan University, Nepal | Creating Weyl nodes by Magnetization Rotation in Kagome Metal $\text{Co}_3\text{Sn}_2\text{S}_2$ |
| 4. | Dr. Arles V. Gil Rebaza | Instituto de Física La Plata IFLP – CONICET, CCT, Argentina | The GIPAW approach for the study of local structures and the electric field gradients at Cd and Ta impurity sites. Application to doped yttria ceramics |
| 5. | Dr. Debarun Dhar Purkayastha | NIT-Nagaland, India | Thin Films and Nanostructures for Self-cleaning Applications |
| 6. | Dr. Anand Pariyar | Sikkim University, India | Metal organic framework as functional materials |
| 7. | Prof. B. Indrajit Sharma | Assam University, India | Density Functional Theory: electronic structure calculation |
| 8. | Dr. P.K. Das | University of Oslo, Norway | Minerals behavior under extreme conditions: A DFT |

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| | | | approach |
| 9. | Dr. D. Gupta | Weizmann Institute of Science, Israel | Charged particle collisions and its implications to atomic and molecular systems |
| 10. | Dr. P. Pradhan | MIT Kavli Institute for Astrophysics and Space Research, USA | Astrophysics, neutron stars and animals. Wait, what? |
| 11. | Prof. P. Poullose | IIT Guwahati, India | Cosmic Evolution and Particle Dynamics |
| 12. | Dr. Pratap Reddy | National Institute of Nutrition, Hyderabad, India | In vivo imaging in nanoparticles based drug delivery to target tumor- an advanced and accelerating biomedical imaging method |
| 13. | Prof. Y. Al-Douri | University of Malaya, Malaysia | Quantum dots: Theoretical studies |
| 14. | Dr. Debasish Borah | IIT Guwahati, India | Neutrinos at the crossroads of particle physics, astrophysics and cosmology |

Contributory speakers:

There are a total of 94 contributory speakers presented their oral presentation and others were participants only making total 212 participants from different parts of the country as well as abroad.

The inaugural session of the e-conference started at the scheduled time i.e. at 10 A.M on 9th July 2020, by the welcome address from the convener of the program Dr. Amit Shankar in the presence of around 200 registered participants and invited speakers followed by the welcome note delivered by the respected Patrons Dr. Samir Bal, Principal, Kurseong College and Fr. (Dr.) Donatus Kujur, Principal, SJ. After that our respected chief speaker Prof. V. Madhurima, was requested to address the e-conference and finally the inaugural session was concluded by the vote of thanks by the Co-convener Dr. Himanshu Joshi.

The Technical Session of the e-conference was started with the talk on the topic Droplets: Properties and Relevance to COVID -19 by Prof. V. Madhurima, Central University of Tamil Nadu, India followed by Dr. M.P. Ghimire from Tribhuvan University, Nepal , Dr. P.K. Das from University of Oslo, Norway and Dr. D.P. Rai from Pachhunga University College, India. As there was huge number of oral presentation, two parallel sessions had been conducted in Room 1 and Room 2. Room 1 was chaired by Prof. R.K. Thapa and Room 2 was chaired by Dr. M.P. Ghimire. After the presentations a break was taken till the evening session begun at 7 pm. The program schedule (in IST) of the technical sessions scheduled as follows:

Program Schedule (in IST)

Technical Session

Date: 9th July,2020

Morning session

| Time | Name of the Speaker | Institute/University | Title of Talk |
|----------|--------------------------------------|---|--|
| 10:40am | Prof. V. Madhurima | Central University of Tamil Nadu, India | Droplets: Properties and Relevance to COVID -19 |
| 11:10am | Dr. M.P. Ghimire | Tribhuvan University, Nepal | Creating Weyl nodes by Magnetization Rotation in Kagome Metal $\text{Co}_3\text{Sn}_2\text{S}_2$ |
| 11:40am | Dr. P.K. Das | University of Oslo, Norway | Minerals behavior under extreme conditions: A DFT approach |
| 12:10pm | Dr. D.P. Rai | Pachhunga University College, India | Thermoelectric properties of Heusler alloys |
| 12:40 pm | Oral presentation (Parallel Session) | ROOM-1 Coordinated by Dr. R.K. Thapa | ROOM-2 Coordinated by Dr. M.P. Ghimire |

ENENING SESSION

(7 pm onwards)

The evening session was being conducted by Prof. V. MADHURIMA

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|---------|-------------------------|--|---|
| 7 pm | Dr. D. Gupta | Weizmann Institute of Science, Israel | Charged particle collisions and its implications to atomic and molecular systems |
| 7:30 pm | Prof. P. Poulouse | IIT Guwahati, India | Cosmic Evolution and Particle Dynamics |
| 8 pm | Dr. Arles V. Gil Rebaza | Instituto de Física La Plata IFLP – CONICET, CCT, Argentina | The GIPAW approach for the study of local structures and the electric field gradients at Cd and Ta impurity sites. Application to doped yttria ceramics |
| 8:30 pm | Dr. P. Pradhan | MIT Kavli Institute for Astrophysics and Space Research, USA | Astrophysics, neutron stars and animals. Wait, what? |

Date: 10th July,2020

Morning session

| Time | Name of the Speaker | Institute/University | Title of Talk |
|----------|--------------------------------------|---|---|
| 10 am | Prof. B. Indrajit Sharma | Assam University, India | Density Functional Theory: electronic structure calculation |
| 10:30 am | Dr. Debasish Borah | IIT Guwahati, India | Neutrinos at the crossroads of particle physics, astrophysics and cosmology |
| 11 am | Dr. AnandPariyar | Sikkim University, India | Metal organic framework as functional materials |
| 11:30 | Oral presentation (Parallel Session) | ROOM-1 Coordinated by Dr. R.K. Thapa | ROOM-2 Coordinated by Dr. M.P. Ghimire |

| Time | Name of the Speaker | Institute/University | Title of Talk |
|----------|---------------------|---|--|
| 12:15 pm | Dr. Pratap Reddy | National Institute of Nutrition, Hyderabad, India | In vivo imaging in nanoparticles based drug delivery to target tumor- an |

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| | | | advanced and accelerating biomedical imaging method |
| 12:45 pm | Dr. Debarun Dhar Purkayastha | NIT-Nagaland, India | Thin Films and Nanostructures for Self-cleaning Applications |
| 1:15 pm | Prof. Y Al-Douri | Quantum dots: Theoretical studies | University of Malaya, Malaysia |

Three best oral presentations and presentations were selected from the contributory presentations. The e-certificates were issued to registered participants fulfilling 90% attendance during the session and submitting the feedback form.

Amit Shankar

Dr. Amit Shankar

Convener

ICRAPMS-2020