



IPSL - Newsletter

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INSTITUTE OF PHYSICS, SRI LANKA (IPSL)

Vidya Mandiraya, 120/10, Wijerama Mawatha, Colombo 7, Sri Lanka.

Council Members 2020/2021

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IPSL Highlights - 2020

IPSL Webinar Series

It was decided by the council to conduct webinar in each month of the year by inviting a professional in Physics related field. Objective of this webinar series to promote Physics and its applications and also to aware the public on hot key topics related to science and technology. It was started in November 2020.



(a)



(b)



(c)

Resource Persons of first three IPSL Webinar Series

a) November b) December c) January

- 29th November 2020 - title “How to build a website fast and ease” by Dr. G.D. Illeperuma, The Open University of Sri Lanka
- 29th December 2020 - title “Cooking nanoparticle soups with lasers: Laser sintering of interconnects printed on paper” by Dr. D. L. Weerawarne, University of Colombo
- 23rd January 2021 - title “New Frontiers in Super conductivity: Superhydrides at High Pressures” by Prof. Ranga P. Dias, University of Rochester, USA

41st Annual General Meeting

Initially, Council decided to hold the 37th Technical Sessions and the 41st AGM of the IPSL on March 20, 2021 at the Auditorium, Sri Lanka Association for the Advancement of Science, Colombo 07. Due to the Covid 19 pandemic, it was decided to conduct the AGM and Technical sessions under specific health guidelines.

New office bearers and the members of the Council were unanimously elected for the year 2021/2022.

Prof. NGS Shantha was elected as the President. He thanked the immediate past president Prof. VPS Perera and all the council members for extending their fullest support in all the activities conducted by the Institute of Physics Sri Lanka in the past year. Finally, the president sought dedicated support from the newly elected council members to carryout the IPSL activities forward in 2021/2022.

Papers Presented at the 37th Technical Sessions

Twenty one research papers were received and sixteen were accepted for oral presentations at the Technical Sessions, after reviewing each and every paper by two reviewers. Five papers were recommended for the Sri Lanka Journal of Physics (SLJP) by the reviewers. Only the abstracts of those papers were published in the proceedings of the technical session. The papers accepted for oral presentations and the programme for the Technical Sessions on March 20, 2021 are given below.

Technical Presentations

Session I (0830-1000 hrs) - Session Chairman: *Dr R C L De Silva*

1. **Rainfall Forecasting in Sri Lanka Using ANN-Case study for Colombo.**
T.D.L Gayanga, R. D. Hettiarachchi
2. **Satellite-based remote sensing as a tool to monitor vehicle usage: A case study in Sri Lanka.**
Hasith E Perera and Hiran H E Jayaweera
3. **Detection of ionizing radiation using simple instruments**
P.B.B. Weligampola, C.P. Jayalath and T.P. Ranawaka
4. **Analysis of material properties of offshore-sand sludge in Muthurajawela: A case study**
C. Niroshan, S.A.D.A.S. Suraweera, S.S.K Muthurathna, P.K.D.D.P. Pitigala
5. **Design and construction of a cooling system using a Peltier based thermoelectric device.**
Udaya Rahubadde, Hasith Hewainna
6. **First Principle Study of Alkaline Metal Intercalation in Twisted Bilayer Graphene**
N K R Perera, K M Abeywickrama, W W P De Silva

Session II (Abstracts): (1030-1200 hrs) - Session Chairman: *Prof. P A A Perera*

7. **Physical Characterizations of Casein by Using Electrochemical and Spectroscopic Techniques**
T.R. Senevirathne, G.C. Wickramasinghe, V.P.S Perera and K.T. Hettiarachchi*
8. **Effects of Acidification of Clove Fruit Dye Extracted in Water and Ethanol for Performance Enhancement of DSSCs**
D.T.B. Herath, G.C. Wickramasinghe, G.M.L.P. Aponsu and V.P.S. Perera
9. **The effect of surface plasmon resonance on the photovoltaic properties of CdS quantum dot sensitized solar cells**
W.I. Sandamali, G.K.R. Senadeera, M.A.K.L. Dissanayake, T. Jaseetharan, V.P.S. Perera, J.C.N. Rajendra, N. Karthikeyan and L.A. Wijenayaka*
10. **Fabrication of P3HT/PCBM Inverted Solar Cells with ZnO electron transport layer**
R. M. Geethanjana Wanigasekara, D. G. K. K. Namawardana, W. T. M. A. P. K. Wanninayake, K. M. D. C. Jayathilaka, R. P. Wijesundera, W. Siripala
11. **Fabrication of Size-tunable Graphitized Carbon Spheres with hierarchical surface morphology on p-Si (100) by Chemical Vapor Deposition**
B.V.N. Sewwandi, A.R. Kumarasinghe, D. Thushara, R. Weerasooriya*
12. **Graphene based Piezoresistive strain sensor for human body motion detection**
PGKA Perera, HPTS Perakotuwa, AAN Prabhath, DDNB Daya, Vimukthi Jayaweera

Session II (1300-1445 hrs) - Session Chairman: *Prof. S R D Kalingamudali*

13. **Development of a Cost-Effective and Reliable Spin Coating Device Promoting Local Enterprises to Meet the Research Needs.**
G.W.M.D. De Silva, P.G.T.R. Payagala, C.K. Edirisinghe, G.D. Illeperuma and V.P.S. Perera
14. **Fabrication of P3HT: PCBM Inverted Organic Solar Cells.**
D. G. K. K. Namawardana, R. M. Geethanjana Wanigasekara, W. T. M. A. P. K. Wanninayake, K. M. D. C. Jayathilaka, R. P. Wijesundera, W. Siripala*
15. **Growth of ZnO thin films on Mo substrate for PV applications.**
W. T. R. S. Fernando, K. M. D. C. Jayathilaka, R. P. Wijesundera and W. Siripala
16. **Fabrication of Magnesium ion Rechargeable Battery Using Dolomite as the Cathode Material**
A. M. U. S. Athanayake, C. N. Nupearachchi and V. P. S. Perera

President's Talk 2021

Prof. V. P. S. Perera (President 2019/2020 & 2020/2021)

New Council

The Council photograph was not taken due to the health restrictions of Covid 19 pandemic in the year 2020/2021.

Prof. A. W. Mailvaganam Memorial Oration —2020

Professor A.W. Mailvaganam Memorial Oration 2020 was not held in November due to Covid 19 outbreak as outsiders were not permitted to enter the University of Colombo.

Sri Lankan Olympiad Competitions

The IPSL conducts four local Olympiad competitions namely; the Sri Lankan Physics Olympiad Competition, the Sri Lankan Astronomy and Astrophysics Olympiad Competition, the Sri Lankan Junior Astronomy Olympiad Competition and Sri Lankan Junior Science Olympiad Competition at National level in view of promoting Physics, Astronomy and Science among school children.

The above competitions are conducted annually by the IPSL in collaboration with the Department of Physics, University of Colombo and Kelaniya. Applications are called from school children those who wish to participate at these competitions, and competitions are held in all three languages (Sinhala/Tamil/English) at the examination centres at University of Colombo, University of Sri Jayewardenepura, University of Kelaniya, University of Jaffna, Vavuniya Campus, University of Ruhuna, Open University (Colombo, Batticaloa, Polgolla), Rajarata University, Wayamba University and Uva Wellassa University.

Those who excel in these national competitions are awarded medals and certificates at national level. Moreover, a maximum of five selected students who excelled at the National Olympiad competitions will be sent to the respective International Olympiad competitions after being given a vigorous training. The three national coordinators of the respective Olympiad competitions are Professor S.R.D. Rosa (National Coordinator/Physics Olympiad), Professor K.P.S.C. Jayaratne (National Coordinator/Astronomy and Astrophysics Olympiads) and Professor H.H. Sumathipala (National Coordinator/Science Olympiad).

Sri Lankan Olympiad Competitions

The following members served in the National Olympiad sub-committee during the period of review.

Professor S.R.D. Rosa	- National Coordinator/Physics Olympiad and Chairman of the Olympiad sub-committee
Professor K.P.S.C. Jayaratne	- National Coordinator/Junior Astronomy Olympiad and the Astronomy and Astrophysics Olympiad
Professor H.H. Sumathipala	- National Coordinator/Junior Science Olympiad
Professor W.U. Chandrasekara	- Assistant Coordinator/Junior Science Olympiad
Professor N.A.K.P.J. Seneviratne	- Assistant Coordinator/Junior Science Olympiad
Professor K P S C Jayaratne	- Examination Coordinator, University of Colombo
Dr. R. V. Cooray	- Examination Coordinator, University of Colombo
Dr. H H E Jayaweera	- Examination Coordinator, University of Colombo
Dr W T M A P K Wanninayake	- Examination Coordinator, University of Kelaniya
Professor W.G.D. Dharmaratne	- Examination Coordinator, University of Ruhuna
Dr. G.D.K. Mahanama	- Examination Coordinator, University of Ruhuna
Dr. G K R Senadeera	- Examination Coordinator, Open University, Kandy
Professor P. Ravirajan	- Examination Coordinator, University of Jaffna
Professor F.C. Ragel	- Examination Coordinator, Eastern University, Sri Lanka
Profesor V.P.S. Perera	- Examination Coordinator, Open University, Kandy
Dr. Ms. H O Wijewardane	- Examination Coordinator, Rajarata University
Mr. A D Kamalanathan	- Examination Coordinator, Open University, Batticaloa
Professor K Vidanapathirana	- Examination Coordinator, Wayamba University
Mr. S Kuhanesan	- Examination Coordinator, Vavuniya Campus
Dr. Jagath Pitawala	- Examination Coordinator, Uva Wellassa University
Dr. N G S Shantha	- Examination Coordinator, Jayewardenepura University

Ex-Officio

Professor V P S Perera	- President/Institute of Physics, Sri Lanka
Professor H H Sumathipala	- Treasurer/ Institute of Physics, Sri Lanka
Mr. D L N Jayathilake	- Assistant Treasurer/ Institute of Physics, Sri Lanka
Mr. M P Vipulasena	- Director/Science, Ministry of Education

- The 16th Sri Lankan Physics Olympiad Competition, the 14th Sri Lankan Astronomy and Astrophysics Olympiad Competition, the 10th Sri Lankan Junior Astronomy Olympiad Competition and the 6th Sri Lankan Junior Science Olympiad Competition were not held in 2020 due to health restrictions of Covid 19 pandemic situation.
- The IPSL Olympiads Awards Ceremony-2020 was not held since Olympiad examinations could not be conducted in year 2020.

Foundation Course in Physics

The lectures of the Foundation course in Physics were conducted online via Zoom due to Covid 19 situation and final examinations were held. The programme will be advertised for the next intake in May 2021.

OPA Membership

Institute of Physics Sri Lanka became a member of the Organization of Professional Associations (OPA) from December 2019. The president and one nominee by the Ex-Co of IPSL represent the Executive Council of OPA.

Best Undergraduate Physics Research Project Award

In recognition of the growing significance of science and technology, and with the aim of strengthening research skills of undergraduates in the field of physics education, an annual competition for Best Undergraduate Physics Research Project Award is organized for university undergraduates in Sri Lanka, by the Institute of Physics, Sri Lanka.

The competition was not held in year 2020 and the applications were called from the Physics Honours Degree students who have passed out in both of the years, 2020 and 2021.

IPSL Website and Membership Portal

The template of the IPSL website has been changed adopting a new theme and new web site of the IPSL has been launched in February 2021.

The Membership Portal contains services for members of the Institute of Physics, Sri Lanka. The database will consist of password protected login for each member and once logged in, he or she can update his/her information. General public can view the information of the members with their consent. This has to be enabled in future.

Publications

Proceedings of the Technical Sessions

The Council published the Proceedings of the 37th Technical Sessions of the IPSL (March 2021) in the form of a printed periodical in monochrome with 89 pages and the softcopy will be uploaded to the IPSL website after holding the Technical Sessions. The members of the Technical Sessions Editorial Committee are;

Chairman: Professor K P S C Jayaratne
 Professor D D N B Daya
 Professor L B D R P Wijesundera
 Professor P A A Perera
 Dr. (Ms.) H O Wijewardane
 Dr. P K D D P Pitigala (Convener, Ex-officio)
 Professor V P S Perera (Ex-officio)

Sri Lankan Journal of Physics (SLJP)

The Volume 22- Issue I of the journal was published on-line on the IPSL web site www.ipsl.lk, and also at the Sri Lankan Journal Online (SLJOL) system. Hardcopies of Volumes 22 will be printed and distributed to all Libraries in the state Universities in the future. The Editorial Board of the SLJP is as follows.

Editor in Chief: Professor P.A.A. Perera (University of Kelaniya)
 Associate Editors: Professor W.G.D. Dharmaratne (University of Ruhuna)
 Professor J.K.D.S. Jayanetti (University of Colombo)
 Professor K.P.S.C. Jayaratne (University of Colombo)
 Professor A.G.U. Perera (Georgia State University)
 Professor D.U.J. Sonnadara (University of Colombo)
 Professor W.L. Sumathipala (The Open University of Sri Lanka)
 Professor R.C. Woods (Louisiana State University)
 Ex-Officio: Professor V.P.S. Perera (Open University of Sri Lanka)
 Copy Editor: Professor P.S. Hewageegana (University of Kelaniya)

IPSL Newsletter

The IPSL Newsletter 2018 (Volume 12) and Newsletter 2019 (Volume 13) has been prepared and published on-line in the IPSL web site www.ipsl.lk.

The Annual Get-Together & Dinner

The IPSL Members' Annual Get-together & Dinner was not held in 2020 due to health restrictions of Covid 19 pandemic situation.