



IPSL - Newsletter

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The News Letter of the Institute of Physics, Sri Lanka

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INSTITUTE OF PHYSICS, SRI LANKA (IPSL)

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

Council Members 2022/2023

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IPSL Highlights - 2022

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 and the webinars for 2022 were continued in each month except on February.



Resource Persons of IPSL Webinar Series 2022

- | | |
|-----------------------------|---------------------------|
| 1. Prof. Channa R De Silva | 7. Prof. Rohan Senadeera |
| 2. Dr. Morrel Fonseka | 8. Dr. C S Thotawaththage |
| 3. Dr. Pubuditha Abeysinghe | 9. Dr. Janith Weerasinghe |
| 4. Dr. Dilmini Wijesinghe | 10. Dr. Muhammad Kooh |
| 5. Dr. Janaka Adassuriya | 11. Dr. T Jaseetharan |
| 6. Dr. Roshan Thotagumuge | |

42nd Annual General Meeting

The 38th Technical Sessions and 42nd AGM of the IPSL was held on March 26th, 2022 at the Board Room, Faculty of Applied Sciences, University of Sri Jayewardenepura.

New office bearers and the members of the Council were unanimously elected for the year 2022/2023.

Prof. NGS Shantha Gamage was elected as the President for the second term. He thanked 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 carry out the IPSL activities forward in 2022/2023.

Papers Presented at the 38th Technical Sessions

Twelve research papers were received and nine were accepted for oral presentation at the Technical sessions, after reviewing each and every paper by two reviewers. Three 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 Sessions.

The papers accepted for oral presentations and the programme for the Technical Sessions on March 26, 2022 are given below.

Technical Presentations

Session I (0900-1020 hrs) - Session Chairman: *Dr. U S Rahubadda*

- Substrate Effect on the Structural and Morphological Variations of Electrodeposited Cuprous Oxide Thin films in Acetate Bath.**
A.H.M.N.N.Bandara, V.P.S.Perera, G.K.R Senadeera, K.N. D Bandara
- Hot carrier base photovoltaic response of GaSb/InAs Type-II strained-layer superlattice structure in the Terahertz (THz) region**
P.K.D.D.P. Pitigala
- Fabrication of Cu₂O homojunction with ZnO buffer layer**
S.A.A.B. Thejasiri, F.S.B. Kafu, K.M.D. Jayathilake, L.S.R. Kumara, R.P. Wijesundera, W. Siripala
- Graphite/ TiO₂ counter-electrodes assembled with TiO₂ multilayer photoelectrode for low-cost quasi solid-state dye-sensitized solar cells**
H. M. N. Wickramasinghe, K. Wijayarathne, T. M. W. J. Bandara

Session II (Abstracts): (1040-1200 hrs) - Session Chairman: *Prof. H H Sumathipala*

- Comparison of ZnO Nano Particles Synthesized Using Sodium Hydroxide and Triethylamine for Photovoltaic Applications**
G.C. Wickramasinghe, V.P.S. Perera, R.Senthilnithy and C.N. Nupearachchi
- Interactions and transport properties of ionic liquid and hydroxyapatite nano-filler based sodium ion conducting gel polymer electrolyte (Not presented)**
M.D.M. Nayanakanthi, H.M.J.C. Pitawala, J.L. Ratnasekera, T.M.W.J. Bandara, L.B.E. Gunasekara
- Thermal Properties of Pressurized Sawdust and Natural Rubber Latex Composites**
B. Dushyanthini, V.P.S. Perera, J.C.N. Rajendra, N. Karthikeyan, G.K.R. Senadeera
- Methods of Inducing Magnetism into Graphene Monolayer**
H N S Peiris, W W P De Silva

Session III (1300-1440 hrs) - Session Chairman: *Prof. P A A Perera*

13. Design and Development of Real-Time Controller Based on ARM cortex-M Processor for Automated Altitude-Azimuth Telescope Mount

H.A. Rangana Madushanka Perera, P.G.T.R. Payagala, L.A.D.B.K. Gunawardana, G.D. Illeperuma and V.P.S. Perera

10. Locating Earthquakes Occurring in Sri Lanka

K K D A C Karunaratne, D.D.T.S Chandrasiri, S.S.Kumarawadu, N.G.S.S. Gamage

11. Investigation of the connection between elephant acoustic communication signals and locomotive induced air-borne noise

L S P Perera, C M Kalansuriy and N G S S Gamage

12. Construction of a Muon Detector and testing the suitability for detecting Cosmic Ray Muons at Sea Level

S U Munasinghe, H K Y P M Jayasingha, A U Abeysekara, W M K P Wijayarathna

New Council

The Council photograph was taken for the year 2022/2023 on 02nd December 2022.



Seated Row (L-R): Dr. (Mrs.) WWP De Silva (Joint Secretary), Dr. (Mrs.) CN Nupearachchi (Co-Editor), Mr. C Kalansuriya (Assistant Treasurer), Prof. HH Sumathipala (Vice President), Prof. NGSS Gamage (President), Prof. VPS Perera (Immediate Past President), Dr. RCL De Silva (Vice President), Prof. PKDDP Pitigala (Treasurer), Dr. WKIL Wanniarachchi (Co-Editor), Dr. US Rahuabadda (Joint Secretary)

Standing Row (L-R): Prof. PAA Perera (Council Member), Mr. DLN Jayathilake (Council Member), Dr. (Ms.) HO Wijewardana (Council Member), Prof. KPSC Jayaratne (Council Member), Dr. WTMAPK Wanninayake (Council Member), Prof. DDNB Daya (Council Member)

In Absentia : Dr. DL Weerawarne (Council Member)

Prof. A. W. Mailvaganam Memorial Oration —2022

Professor A.W. Mailvaganam Memorial Oration 2022 was held on 02nd December 2022 at the New Physics Lecture Theater (NPLT), University of Colombo. It was delivered by Prof. J K D S Jayanetti, Dean, Faculty of Technology, University of Colombo. The topic was about ‘Space From Culture of Research to Culture of Innovation’.



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/Junior Astronomy Olympiad and Astronomy and Astrophysics Olympiad) and Professor H.H. Sumathipala (National Coordinator/Junior Science Olympiad).

Six students were selected for Sri Lanka Junior Science Olympiad (SLJSO) where all arrangements were made by Prof. H. H. Sumathipala to conduct IJSO 2022 at University of Kelaniya, 29th October. The contestants participated the international Olympiad in Bogota, Colombia on December 2nd 2022. Prof. P. A. A. Perera contributed to moderate the examination paper.

Workshops

A two-day Workshop organized by IPSL on “Digital Image Processing” was conducted on the 8th and 9th of October at the University of Sri Jayewardenepura. It was a successful event, and 18 were participated in different domains. Dr. WKIL Wanniarachchi was the resource person.



Foundation Course in Physics

The lectures and practicals of the Foundation course in Physics were conducted online via Zoom and final examinations were held. The original certificates of the last batch were distributed among the passed participants. The programme will be advertised for the next intake in 2023.

OPA Membership

Institute of Physics Sri Lanka became a member of the Organization of Professional Associations (OPA) from December 2019. The membership was renewed for 2022. The president and Prof. KPSC Jayaratne of IPSL represent the Executive Council of OPA were nominated for this year.

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.

IPSL had received 9 applications this time. A panel consisting of following members were appointed for the evaluation of the projects; Prof. P A A Perera (Chair of the panel), Prof. V P S Perera, and Dr. (Ms.) H O Wijewardane. Evaluation was conducted at the Department of Physics, University of Sri Jayewardenepura on 2nd December 2022.

The winner of the Best Undergraduate Physics Research Project 2021/2022 was Mr. YMDCY Bandara, from University of Peradeniya with the research title “Fabrication of Thermoelectric Generators using Non-toxic Materials”.

IPSL YouTube Channel

The official IPSL YouTube channel was launched on 16th July, 2022. All recorded videos of IPSL webinar series were published in the channel.

<https://www.youtube.com/@ipslsrilanka8054/featured>

Publications

Proceedings of the Technical Sessions

The Council published the Proceedings of the 38th Technical Sessions of the IPSL (March 2022) in the form of a printed periodical in monochrome with 79 pages and the softcopy has been 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 N G S S Gamage (Ex-officio)
 Professor P A A Perera
 Professor P K D D P Pitigala
 Dr. (Ms.) H O Wijewardane
 Dr. W W P De Silava (Convener, Ex-officio)

Sri Lankan Journal of Physics (SLJP)

The Volume 23- 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 23 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. Darmaratne (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)
 Prof. C P Abeyratne, University of Sri Jayewardenepura
 Professor R.C. Woods (Louisiana State University)
 Professor V.P.S. Perera (Open University of Sri Lanka)
 Ex-Officio: Professor N. G. S. S. Gamage (University of Sri Jayewardenepura)
 Copy Editor: Professor P.S. Hewagegana (University of Kelaniya)

The Annual Get-Together & Dinner

The IPSL Members' Annual Get-together & Dinner was held on 02nd December 2022 at Grand Oriental Hotel, Colombo with 50 participants.

