



IPSL - Newsletter

December – 2018

The News Letter of the Institute of Physics, Sri Lanka

Volume 12, Issue 1

INSTITUTE OF PHYSICS, SRI LANKA (IPSL)

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

Council Members 2018/ 2019

President	Professor PAA Perera
Past President	Professor LBDRP Wijesundara
Vice Presidents	Mr SG Punchihewa Professor VPS Perera
Jt. Secretaries	Dr NGS Shantha Dr WTMAPK Wanninayake
Treasurer	Profesor HH Sumathipala
Asst. Treasurer	Dr PKDDP Pitigala
Editors	Dr (Ms) HO Wijewardane Mr GH Asoka
Members	Professor KD Jayasuriya Professor SRD Kalingamudali Professor KPSC Jayaratne Professor DDNB Daya Professor SRD Rosa (Co- opt) Dr (Mrs) UK Abeywarna Dr RV Coorey Dr RCL De Silva

Inside this issue

Annual General Meeting	2
Technical Sessions	2
New Council	3
Guest Lectures	4
Best Undergraduate Research Project	4
Astronomy & Astrophysics Olympiad	4
Physics Olympiad	5
Junior Science Olympiad	6
Olympiad Award Ceremony	6
Annual Get-together	7
IPSL Journal Information	8

23rd International Astronomy Olympiad – 2018 in Sri Lanka



IPSL is proud to be a contributor for holding the 23rd International Astronomy Olympiad (IAO) which was held in Colombo, Sri Lanka as a part of the 70th Independence year celebration of Sri Lanka. This was the very first Olympiad ever hosted by Sri Lanka and teams from 22 countries participated in the event. Around 130 foreign individuals came to Sri Lanka to participate for this internationally standardized 10 day program which held from 6th October to 14th October 2018 out of which 83 were the contesters with an age limit of 15-17. Under the patronage of the Ministry of Science, Technology and Research, Institute of Physics, Sri Lanka jointly with Sri Lanka Association for the Advancement of Science (SLAAS), University of Colombo, Arthur C Clarke Institute for Modern Technologies and Sri Lanka Planetarium lined up for the common objective where the Local organizing Committee was formed.

Professor A. W. Mailvaganam Memorial Oration - 2018



Professor A.W. Mailvaganam Memorial Oration 2018 titled “Standardization: Some facts” was delivered by Mr. Susantha G. Punchihewa (Ex-SLSI, IPSL Vice-President). Event was held at 5:30 pm on Saturday, November 17, 2018 at the New Physics Lecture Theatre (NPLT), Department of Physics, University of Colombo.

39th Annual General Meeting

The 39th Annual General Meeting of the Institute of Physics Sri Lanka was held on 16th March, 2018 at the Board Room of Faculty of Science in the University of Kelaniya. New office bearers and the members of the Council were elected for the year 2018/2019.

Prof. VPS Perera was elected as the President. He thanked all the council members for extending their fullest support in all the activities conducted by the Institute of Physics Sri Lanka. He appreciated the dedicated work of Olympiad Coordinators to uplift the image of IPSL in the society. Prof. Perera thanked the two joint secretaries and the treasurer for their untiring services.

At last the president sought dedicated support from the new council members to carryout the IPSL activities forward.

Papers Presented at the 35th Technical session

The 35th technical sessions of the Institute of Physics, Sri Lanka was held on the 16th of March, 2018 at the board room faculty of science University of Kelaniya. Thirteen papers were presented within three sessions. Prof. S R D Kalingamudali chaired the Session I from 08.30h to 10.10 h, Prof. K D Jayasuriya chaired the Session II from 10.30 h to 12.30 h and Prof. H H Sumathipala chaired the Session III from 13.20 h to 15.00 h.

List of papers presented

1. Effect of Fe³⁺ Ion on the Performance of a Bio-Cell Made of Banana Pith Electrolyte and Ferrous Anode
C. N. Nupearachchi, G. C. Wickramasinghe and V. P. S. Perera
2. Electron Lifetime in Dye-Sensitized Solar Cells Made of SnO₂ Photoanodes Coated with Thin Layer of Silica
N.F.Ajward, J.C.N. Rajendra and V.P.S. Perera
3. Optimization of Adsorption of Carissa carandas Dye on TiO₂ Photoanodes for Efficient Sensitization of DSSCs
G.C Wickramasinghe, D. Balasundaram, U.G.M.D Rajasekara, G.M.P.L Aponsu and V.P.S. Perera
4. Comparison of composites of Reduced Graphene oxide / Ferric oxide with Reduced Graphene oxide / Ferric oxide / Graphite as Anode Materials of Na-ion rechargeable batteries
G. K. Waruni Perera, R.C.L. De Silva, H.C.D.P.Colombage, I.R.M. Kottegoda and L.D.C Nayanajith
5. Electronic and structural properties of Cu₂O polycrystalline thin films grown on adhesive copper tape
R. M. H. H. Jayarathne, P K D D P Pitigala and V. P. S. Perera
6. Syntheses and growth of *p*-Copper(I) Bromide polycrystalline thin films: Electronic, structural and stability properties
K. M. D. P. M. Malwathumulla, P. K. D. D. P. Pitigala and W. W. P. de Silva
7. Growth of CZTS thin films by a single step electrodeposition technique for PV applications
W. T. R. S. Fernando, K. M. D. C. Jayathilaka, R. P. Wijesundera and W. Siripala
8. Preparation and Characterization of Reduced Graphene Oxide/Nickel Oxide and Reduced Graphene Oxide/Nickel Oxide /Tin Oxide Nano Composites for Super capacitors
D.U.Abesequera, D.D.N.B.Daya, R.C.L.De Silva and I.R.M.Kottegoda

Papers Presented at the 35th Technical session

Continued from Page 2....

9. Low cost, environmental friendly rechargeable cell with Zn and natural graphite electrodes
K. W. Prasadini, K. S. Perera and K. P. Vidanapathirana
10. Determination of exhaust sound pressure levels emitted by road vehicles in Sri Lanka
C.L. Perera, C.P. Abeyratne, and C.M. Kalansuriya
11. The study of evanescent enhancement of solid core photonic crystal fiber with wavelength.
U. Rahubadde and L. Xia
12. Cognizing of the Commercial Viability of Manufacturing Urea Utilizing Offshore Natural Gas Deposits of Mannar Basin, Sri Lanka
W. A. C. P.I. Karunasinghe, S.S.N. Gamage and D. T. P. K. Withanage
13. Radon monitoring with RAD7 instrument to find out radon concentration variation in soil and gas
G.A.S.N. Perera, S.R.D. Rosa, P.D. Mahakumara and R.A.N.C. Ranasinghe
14. Presidential address – 2019
Experiments on Solar Neutrinos: Past, Present and Future
Professor P.A. Aloy Perera (from 2.00 pm to 3.00 pm)

New Council

Guest Lectures

Dr. Sampath Gamage of Linkoping University, Sweden, delivered a guest lecture titled “Nano-scale Spectroscopy and Imaging of Virus Particles and Layered Materials” on July 30, 2018, at the University of Kelaniya.

Best Undergraduate Physics Research Project

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 (BURPA) is organized for university undergraduates in Sri Lanka, by the Institute of Physics, Sri Lanka. Sixteen applications were received for the competition held on 2018 and applicants made presentations before the evaluation panel, and Mr. J. H. T. B. Jayamaha was the winner of the BURPA 2018. His research project has been supervised by Professors Kumudu Perera and Kamal Vidanapathirana of the Wayamba University of Sri Lanka,

Astronomy and Astrophysics Olympiad

A total of 309 and 1028 students participated for the 12th Sri Lankan Astronomy and Astrophysics Olympiad competition, and the 8th Sri Lankan Junior Astronomy Olympiad competition respectively. Following team of five students, excelled in the national competitions participated in the 23rd International Astronomy Olympiad (IAO) which was held in Sri Lanka from 6-14 October, 2018.

α Team

H T S D Fernando
A N Nanayakkara
E S S Perera

β Team

S S Somabandu
H O Welivita

Sri Lankan team won one Silver medal and two bronze medals at the 23rd International Astronomy Olympiad. The Silver medal was won by alpha student S S Somabandu of Nalanda College and beta students H T S D Fernando and Miss A N Nanayakkara received the two bronze medals. In addition Mr S S Somabandu received the best result award for Group beta (Senior category).

Professor Chandana Jayaratne who is the IPSL National Coordinators for Astronomy Olympiads and also the General President of SLAAS in 2018 was heading the Local Organizing Committee of IAO as the Chair and President of IAO Dr Michael GavriloV guided the program according to the international rules and guidelines

Continued from Page 4...



During the IAO Examination



During the IAO inauguration

Physics Olympiad

A total of 441 students registered for the 14th Sri Lankan Physics Olympiad Competition. Based on the results of this competition, five students were selected for the participation in the 49th International Physics Olympiad Competition held in Lisbon, Portugal, from 21 to 29 July 2018. The team was led by Dr. Ramal Coorey, Senior Lecturer, University of Colombo. The following students have participated at the event and four students received Honourable Mentions.

1. Mr. W. M. Nirmala Witharama of Eheliyagoda Central College, (Honorable mention)
2. Mr. U. K. Mandara Premalal of S. Thomas' College, Mount Lavinia (Honorable mention)
3. Mr. G. Y. Sandeepa of Richmond College, Galle (Honourable Mention)
4. Mr. D. M. N. Piyumal Dassanayake of Maliyadeva College, Kurunegala.
5. Miss. D. S. Palihakkara of Sujatha Vidyalaya, Matara. (Honourable Mention)



Sri Lankan students' participation in the 49th International Physics Olympiad Competition held in Lisbon, Portugal

Sri Lankan Junior Science Olympiad (SLJSO)

Three hundred and sixty nine students have registered for the Sri Lankan Junior Olympiad competition in the year 2018. In SLJSO – 2018, 12 students won gold medals, 21 students won silver medals while 24 other students won bronze medals.

The following students participated at the 15th International Junior Science Olympiad-2018 that was held in Gaborone, Botswana during 2nd -11th December 2018.

1. T. Chandrakumar (Bronze Medal)
2. G.G.S. Dilshara
3. K. N. D. Fernando (Bronze Medal)
4. R.T.U. Jayasena (Bronze Medal)
5. K. Makarathan (Bronze Medal)
6. S. K. Munasinghe

T Chandrakumar, K N D Fernando, R T U Jayasena, and K Makarathan successfully competed with other International Students secured Bronze Medals. The Sri Lankan team was trained by Prof. H.H. Sumathipala, Department of Physics, National Coordinator of Sri Lankan Junior Science Olympiad and the Country Coordinator for International Junior Science Olympiad, Prof W.U. Chandrasekara, Department of Zoology & Environmental Management and Prof. Kapila Senevirathne, Department of Chemistry, University of Kelaniya.



Team represented Sri Lanka at the International Junior Science Olympiad-2018 that was held in Gaborone, Botswana, during 2nd -11th December 2018

IPSL Olympiad Award Ceremony

The IPSL Olympiads Awards Ceremony-2018 was held on November 17, 2018 from 1:00 pm to 4:30 pm at New Arts Theatre (NAT), University of Colombo under the patronage of Professor T. R. Ariyaratne, Emeritus Professor of Physics, University of Colombo, to award Gold, Silver and Bronze medals for those who had excelled in the 14th Sri Lankan Physics Olympiad Competition, 12th Sri Lankan Astronomy and Astrophysics Olympiad Competition, 8th Sri Lankan Junior Astronomy Olympiad Competition and 3rd Sri Lankan Junior Science Olympiad Competition. Medal for the Best Undergraduate Physics Research Award was also presented at this ceremony.

IPSL Olympiad Award Ceremony– Highlights



Prof. T. R. Ariyaratne, the Chief guest addressing the audience



Receiving a gold medal from the Chief guest



Recipients and guests at the award ceremony

The Annual Get-together & Dinner

The IPSL Members' Annual Get-together & Dinner was held after the Mailvaganam Memorial Oration-2018 on 17th November 2018 at the Faculty Centre, University of Colombo and this was open to the general membership and their spouses.



IPSL Annual Get-Together and Dinner - 2018

Sri Lanka Journal of Physics

The Volume 18 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. Hard copies of Volume 18 will be printed and distributed to all Libraries in state universities in near future.

Editor in Chief
Prof. KD Jayasooriya

Associate Editors
- Prof. JKDS Jayanetti
- Prof. KPSC Jayaratne
- Prof. WGD Dharmaratne
- Prof. DUJ Sonnadara
- Prof. WL Sumathipala
- Prof. AGU Perera
- Prof. RC Woods

Ex Officio: PAA Perera
Copy Editor P S Hewageegana