



# RISTCON 2017

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## 4<sup>th</sup> Ruhuna International Science & Technology Conference

26<sup>th</sup> January 2017

### INAUGURAL SESSION

*Venue: Professor Alawaththagoda Pemadasa Auditorium*

- 0730 h      Registration
- 0800 h      Arrival of the Chief Guest & Guest of Honors
- 0805 h      Lighting the Traditional Oil Lamp
- 0815 h      University Anthem
- 0820 h      Welcome Address by Professor E.P.S. Chandana  
*Chairperson/RISTCON2017*
- 0830 h      Address by Professor P.A. Jayantha  
*Dean, Faculty of Science, University of Ruhuna*
- 0845 h      Address by the Chief Guest Senior Professor Gamini Senanayake  
*Vice Chancellor, University of Ruhuna*
- 0900 h      Keynote Address by Professor Rajendra Rathore  
*Marquette University, Milwaukee, WI, USA*  
**" Novel Organic Materials for Photovoltaic Devices"**
- 1000 h      Vote of Thanks by Dr. K.K.G.U. Hemamali  
*Jt. Secretary/RISTCON2017*
- 1010 h      National Anthem
- 1015 h      Closing the Ceremony and Refreshments

## Technical Sessions- Summary Program

*Venue: Department of Physics (VPHY) and Department of Chemistry(VCHEM), Faculty of Science*

Time	Event				
11.00 – 12.30	<b>Technical session-I Oral Presentations(six parallel sessions)</b>				
	<u>Session A1</u> Botany and Environmental Science <i>VPHY-1</i>	<u>Session B1</u> Chemistry <i>VCHEM-1</i>	<u>Session B3</u> Ecology, Environmental science and Oceanography <i>VCHEM-2</i>	<u>Session C1</u> Fisheries & Aquaculture and Zoology <i>VCHEM-3</i>	<u>Session D1</u> Computer Science <i>VPHY-2</i>
	<u>Session D3</u> Physics <i>VPHY-3</i>				
12.30 – 13.45	Lunch break (Department of Physics)				
13.45 – 14.45	Invited Speech by Associate Professor Nishanta Rajakaruna, Biological Sciences Department, California Polytechnic State University, San Luis Obispo, CA 93407, USA. ” <b>Plants of 'Extreme' Soils: Model Systems for Ecological, Evolutionary, and Applied Research</b> ” Venue: Auditorium, Department of Physics				
14.45- 16.00	Poster session and Tea				
16.00– 17.30	<b>Technical session-II Oral Presentations(four parallel sessions)</b>				
	<u>Session A2</u> Agriculture, Food Science <i>VPHY-1</i>	<u>Session B2</u> Chemistry <i>VCHEM-1</i>	<u>Session D2</u> Mathematics & Statistics <i>VPHY-2</i>	<u>Session D4</u> Physics <i>VPHY-3</i>	
17.30	Closing the Program				

**Oral Presentations Details – Category A**  
(Agriculture, Botany, Molecular Biology & Biotechnology)

**Session Convener: Dr.T.G. Dayananda**

**Session A1** (venue: *VPHY-1*)

**Chairperson: Prof. Nishantha Rajakaruna**

Time	Abs. No	Title
11.00	A-3	<b>Sensitive indicators of <i>R. mucronata</i> Lam. to a biotic stress conditions; early-detection of stressors in mangrove restoration fields</b> <u>Kodikara K.A.S., Madarasinghe S.K., Prasangika K.D., Jayatissa L.P.</u>
11.15	A-4	<b>Hydraulic architecture and hydraulic conductivity of <i>Rhizophora mucronata</i> Lam. in response to water stress</b> <u>Dissanayake N.P., Premachandra G.S.D., Kodikara K.A.S., Jayatissa L.P.</u>
11.30	A-7	<b>Taxonomic implications from leaf stomatal anatomy of <i>Calotropis gigantea</i> (Apocynaceae) found in Matara, Sri Lanka</b> <u>ushpa Abeysinghe, Tanya Scharaschkin, Rachel Hancock and Sanjleena Singh</u>
11.45	A-10	<b>Screening of <i>Trichoderma</i> isolates as bicontrol agents against banana wilt pathogen and evaluating organic biomass wastes for mass production of conidia.</b> <u>Chathuranga, T. S., Masakorala, K. and Abeysinghe, S.</u> Department of Botany, Faculty of Science, University of Ruhuna, Matara
12.00	A-21	<b>Effects of used lubricant oil contaminated soil on soil microbial activity and population size</b> <u>W.G.S. Sriyanthi, K.Masakorala</u>

**Session A2** (venue: *VPHY-1*)

**Session Convener: Dr. K. Masakorala**

**Chairperson: Prof. L. P. Jayatissa**

Time	Abs. No	Title
16.00	A-1	<b>Assessment of Egg Parasitoids in Paddy and Vegetable Farming Systems in Puliyankulama and Mahailluppalama Area, Anuradhapura District of Sri Lanka</b> <u>Samarakoon S. A. M. C., Priyadarshani T.D.C., Hemachandra K.S. and Sirisena U.G.A.I.</u>
16.15	A-5	<b>Effect of locus of the crisis on purchase intention of the crisis brand: Sri Lankan young consumers' view</b> <u>Samaraweera, G.C.</u>
16.30	A-14	<b>Performance evaluation of a maize growth simulation model</b> <u>Rajawatta K.M.W, Dongjian He, Piyaratne M.K.D.K. and Haidong Lu</u>
16.45	A-18	<b>Micropropagation of Jujube (<i>Ziziphus jujuba</i> Mill.) through shoot tip and nodal segment culture</b> <u>Hansika K.P., Perera R.N.I., Ranawake A.L. and Senanayake S.G.J.N.</u>

## Oral Presentations Details – Category B

(Biochemistry & Biophysics, Chemistry, Ecology, Environmental Science and Oceanography)

**Session B1** (venue : **VCHEM-1**)

**Session Convener: Dr. G.B.C.Sanath**

**Chairperson: Prof.Rajendra Rathore**

Time	Abstract No	Title
11.00	B-1	<b>Investigation of extraction conditions to obtain marigold extracts rich in lutein and antioxidants</b> M. D. N. N. Jayarathne and B. G. K. Perera
11.15	B-2	<b>Syntheses of [Re(CO)<sub>3</sub>(NN)Cl] complexes of bulky N,N-donor ligands</b> Sarath D. Perera
11.30	B-6	<b>Microencapsulation of clove oil to improve its usability as a pesticide</b> N.D. Gajasinghe, B. G. K. Perera and R.D. Wijsekera
11.45	B-8	<b>Preparation of cinnamon oil microcapsules to be used as a digestive supplement for people</b> J. P. S. Rasanganie and B. G. K. Perera
12.00	B-9	<b>Development of a smart textile with medicinal properties using lime oil microcapsules</b> P.B. Wijesirigunawardana and B.G.K Perera
12.15	B-21	<b>An evaluation on suitability of fish waste to produce fish oil</b> S. P. B. Sajeewani and Hema M.K.K. Pathirana

**Session B2** (venue : **VCHEM-1**)

**Session Convener: Dr. G.B.C.Sanath**

**Chairperson: Prof.H.M.K.K.Pathirana**

Time	Abstract No	Title
16.00	B-7	<b>Analysis of nutrient compositions in commercially available selected, processed dry food products and instant dry food mixtures</b> Vajira P. Bulugahapitiya and L.A. S. Priyangika
16.15	B-10	<b>Visual Detection of Fluoride ions by a Simple Chromogen, Bromothymol Blue Diacetate</b> A. S. Dissanayake, and W. N. R. Fernando
16.30	B-12	<b>Synthesis and Characterization of Cationic Tri-Oxygen coordinated Ru Complexes</b> Kalutharage N. K. and Yi C. S.
16.45	B-15	<b>Adsorption of Ni<sup>2+</sup> and Pb<sup>2+</sup> by Curry leaves</b> W.M. Wijetunga and R.H.W. Gunasekera
17.00	B-16	<b>Coir Pith Lignin Isolation and Spectroscopic Structure Elucidation</b> L.A. Panamgama and J.W.W.C. Jayalath
17.15	B-22	<b>Treatment of highly acidic wastewater from a food processing industry</b> Hettiarachchi. L. I and Wanniarachchi. S

### Session B3 (VCHEM-2)

Session Convener: Dr. Jeewantha Sampath

Chairperson: Dr. Jinasena Hewage

Time	Abstract No	Title
11.00	B-23	<b>Removal of Reactive Black 5 Using Activated Carbon Produced From Sawdust and Rice Husks - An Effective Way of Effluent Treatment</b> <u>Bandara, T.P.D.S.</u> ; Wadumethrige, S.H and Wanniarachchi.S
11.15	B-14	<b>Impact of different cooking methods on the Antioxidant content of selected underutilized tubers in Sri Lanka</b> <u>H.M.A.J. Herath</u> , H.D.J.E. Wijerathna and A. Chandrasekara

### **Oral Presentations Details – Category C**

(Fisheries & Aquaculture, Medical & Health Sciences, Veterinary Science, Zoology)

### Session C1 (VCHEM-3)

Session Convener: Prof. E.P.S.Chandana

Chairperson: Prof. P. M. C. De Silva

Time	Abs. No	Title
11.00	C-3	<b>A preliminary study on the evaluation of hypocholesterolemic activity of some <i>Phyllanthus</i> species</b> P. G. M. Kalpani, S. R. Weerakoon, S. Somaratne, <u>N. Nilakarawasam</u> and C. Ranasinghe
11.15	C-16	<b>Identification of gill trematode, <i>Centrocestus</i> sp. infect on ornamental fish species in Sri Lanka using morphological characteristics</b> <u>Sumuduni B.G.D.</u> , Munasinghe D.H.N. and Arulkanthan A.
11.30	C-19	<b>Post-hatch ontogenetic changes and their functional significance in guppy fries (<i>Poecilia reticulata</i>) revealed by histology and osteology</b> <u>K.I.G. Hewavitharana</u> , S.H.N.P. Gunawickrama and K.B.S. Gunawickrama
11.45	C-20	<b>Effect of different diets on growth &amp; colour enhancement of red blonde variety of guppy (<i>Poecilia reticulata</i>)</b> <u>Dharmasiri, T.S.K.</u> and De Silva M.P.K.S.K.
12.00	C-23	<b>Evaluation of total phenolic content, total flavonoid content, <i>in vitro</i> antioxidant activity and <i>in vitro</i> antidermatophytic activity of <i>Rhinacanthus nasutus</i> (Aniththa) grown in Sri Lanka.</b> <u>Hettihewa S.K.</u> , <u>De Silva M.N.M.</u> , <u>Wijayarathne W.M.D.G.B</u>
12.15	C24	<b>Micro-climatic gradients across an isolated rainforest remnant bordered by different land use types in the Knuckles range, Sri Lanka</b> <u>Sripal D.D.N.</u> , <u>Gunatilleke I.A.U.N.</u> , <u>Gunaratne A.M.T.A.</u> and <u>Madawala H.M.S.P.</u>

## Oral Presentations Details – Category D

(Computer Science & ICT, Engineering, Mathematics & Statistics, Nano Technology,  
Physics & Geophysical Science)

### **Session D1- (VPHY-2)**

**Session Convener: Dr. Thusangi Wannige**

**Chairperson: Mr. Aruna Lorensuhewa**

Time	Abstract No	Title
11.00	D-44	Quality of Service Factor Categorization for restful Web Services <u>Sewwandi M.A.N.D. and Ilayperuma T.S.</u>
11.15	D-12	<b>A Mobile-based Application for Making Timely Decisions using Participatory Sensing: A Case Study from Sri Lankan Agriculture</b> <u>R.S.I. Wilson and A.I. Walisadeera</u>
11.30	D-14	<b>A method for measuring students' power skills automatically</b> <u>JRKC Jayakody</u>
11.45	D-25	<b>Augmented reality to teach Object Oriented Programming Concepts.</b> <u>Surendra R.M.D.B.</u>
12.00	D-3	<b>Improving the accuracy of k-means algorithm using genetic algorithm</b> Fernando W. T. R., <u>Wijeweera K. R.</u> and Dasanayaka D. M. N. K.
12.15	D-45	<b>Towards a Framework for Evaluating AOSE Methodologies from Agent and Generic Software Engineering Perspectives</b> <u>Hewage U.H.W.A. and Ilayperuma T.S.</u>

### **Session D2 (VPHY-2)**

**Session Convener: Dr. R. A. De Mel**

**Chairperson: Prof. Leslie Jayasekara**

Time	Abstract No	Title
16.00	D-7	<b>Geometric Brownian Motion Based Hybrid Approach to Analysis High volatile Financial Time Series</b> <u>Kapila Tharanga Rathnayaka R.M., Seneviratna D.M.K.N and Jianguo W.</u>
16.15	D-10	<b>Modeling seasonal Leptospirosis cases in Western province of Sri Lanka</b> <u>Gnanapragasam S.R.</u>
16.30	D-32	<b>Analysis of the Seasonal Influenza Model in Actuarial Point of View</b> <u>Perera S.S.N.</u>
16.45	D-35	<b>An investigation on classical and quantum information entropies and diversity measures</b> <u>N Yapage</u>

### **Session D3** (VPHY-3)

**Session Convener: Dr. Nadeesha Wickramage**

**Chairperson: Prof.P.A.Jayantha**

<b>Time</b>	<b>Abstract No</b>	<b>Title</b>
11.00	D-41	<b>Study on noise exposure of train passengers in Sri Lanka</b> <u>S.M.N. Sethunga</u> , J.A.P. Bodhika and W.G.D. Dharmaratne
11.15	D-42(C21)	<b>A preliminary study on behavioral effects of laboratory rats (Albino Wistar) after the sub-chronic noise stress</b> J.R.I.A. Jayakody and J.A.P. Bodhika
11.30	D-47	<b>Noise pollution in Matara city</b> <u>S.M.N. Sethunga</u> , N.H.R Tharuka, J.A.P. Bodhika, W.G.D. Dharmaratna
11.45		

### **Session D4** (VPHY-3)

**Session Convener: Dr. Nadeesha Wickramage**

**Chairperson: Prof.W.G.D.Dharmaratna**

<b>Time</b>	<b>Abstract No</b>	<b>Title</b>
16.00	D-15	<b>Low cost, highly efficient TiO<sub>2</sub> based Electrochromic device for architectural application</b> <u>H.N.M.Sarangika</u> , G.K.R. Senadeera, M.A.K.L.Dissanayake and W.G.M.D.Karunarathna
16.15	D-22	<b>Poly (vinylidene fluoride-hexafluoropropylene) and fumed silica based nano-composite electrolyte for efficient dye sensitized solar cells</b> <u>Weerasinghe A.M.J.S.</u> , Dissanayake M.A.K.L., Senadeera G.K.R., Thotawatthage C.A and Kumari J.M.K.W.
16.30	D-31	<b>Influence of cation concentration in the electrolyte on photovoltaic performance of dye sensitized solar cells</b> <u>J.M.K.W. Kumari</u> , M.A.K.L. Dissanayake, G.K.R. Senadeera, C.A. Thotawatthage and A.M.J.S. Weerasinghe
16.45	D-36	<b>Design and implementation of an altazimuth mount drive for a Newtonian telescope coupled to a DSLR camera</b> <u>Amaradasa H.D.S.</u> , Abeywickrama S.S., Ranatunga E.M., Mahanama G.D.K., Baduge S., Priyankara J.G.V. and Gunawardhana S.D.
17.00	D-1	<b>Co-Relational Analysis of Webometric Measurements in Sri Lankan University Library Websites</b> <u>Ramanayaka, KH</u> , Xianqiao Chen and Bing Shi
17.15	D26(B-11)	<b>Spatio-temporal changes in mangrove cover of three lagoons in Southern Sri Lanka during the last two decades: A GIS study</b> <u>Madarasinghe SK</u> , Yapa KKAS, Kodikara KAS, Satyanarayana B, Udayakantha PMP and Jayatissa LP

\* Name of the presenting author is underlined

# Poster Presentations

*Venue: Department of Physics, Faculty of Science*

## **Category A**

Agriculture, Botany, Molecular Biology & Biotechnology

A-11	<b>A study about agro forestry practices in wet zonal home gardens (special refer to Akurassa DS division)</b> <u>W.M. Gangani Chandralatha</u>
A-13	<b>Fatty acid composition of seed oils extracted from six underutilized fruits grown in Sri Lanka</b> <u>Wedamulla, N, Priyadarshana, Y.A. and Madhujith, T.</u>
A-17	<b>Labour use pattern and cost of production in Soybean cultivation in Anuradhapura District Sri Lanka</b> <u>A.V. Dhanapala and T.Kirupanathan</u>

## **Category B**

Biochemistry & Biophysics, Chemistry, Ecology, Environmental Science, Oceanography

B-4	<b>A preliminary survey of odonates at selected sites in “Kerala Kele” sanctuary, Matara, Sri Lanka</b> <u>Kalpani, P.G.M, Dharmasiri, T.S.K., Amarasinghe, N.J.de S. and Chandana, E.P.S</u>
B-5	<b>Macro Flora and Fauna diversity in selected Sea grass beds in the Southern Sri Lanka.</b> <u>P .R. S. A. Abeyrathna, P. B.T. P. Kumara, R. D. A. Gunasekara,T. and G Dayananda</u>
B-13	<b>Comparison of Mosquito Repellent Activity of Citric Acid Treated and Untreated Samples of the oil of <i>Eucalyptus citriodora</i></b> <u>M.C.N.M.Marasinghe, B.G.K. Perera and D.T.U. Abeytunga</u>
B-18	<b>Ecology and the Level of Habitat Degradation of Upparu Mangrove Forest, Kinniya, Sri Lanka.</b> <u>P.A.K.N.Dissanayake, D.G.T.C.Balawardhana, P.B.T.P.Kumara and E.P.D.N.Thilakarathna</u>
B-19	<b>Heavymetal Contamination in the Vicinity of a Landfill site at Weligama, Matara</b> <u>M.G.T.T. Marasinghe, S.R. Amarasinghe, S.D. Wanniarachchi and K.R. Fernando</u>



### **Category C**

Fisheries & Aquaculture, Medical & Health Sciences, Veterinary Science, Zoology

<b>Abstract No</b>	<b>Title</b>
C-4	<b>Socio-economic Aspects of Fishing Communities: A Case Study in Victoria Reservoir, Sri Lanka</b> <u>Wickremasinghe E.S., Dematawewa C.M.B. and Edirisinghe E.M.L.B.</u>
C-17	<b>Suitability of medicinal plants, <i>Sesbania grandiflora</i>, <i>Aegle marmelos</i> and <i>Allium sativum</i> as feed additives on growth performance of red tilapia</b> <u>Nishshanka K.M., Amarasinghe N.J.De.S. and Guruge W.A.H.P.</u>
C-31	<b>An aqueous pod extract of <i>Capsicum frutescens</i>– as potential botanical for controlling <i>Aphis craccivora</i></b> <u>W.A.K. Thakshila, W.T.S. Dammini Premachandra and M.G.V. Wickramasinghe</u>

### **Category D**

Computer Science & ICT, Engineering, Mathematics & Statistics, Nano Technology, Physics & Geophysical Science

<b>Abstract No</b>	<b>Title</b>
D-2	<b>An efficient line clipping algorithm against a convex polygon</b> <u>WijeweeraK. R., KodituwakkuS. R. and Chamikara M. A. P.</u>
D-4	<b>Preparation and characterization of ZnO-Chitosan nanocomposite and evaluation of its antifungal activity against pathogenic <i>Candida albicans</i></b> <u>Dananjaya S.H.S, Udayantha H.M.V, R.M.C Udayangani, Beom S.S, Jehee L and De Zoysa M</u>
D-8	<b>Parametric forms for Pythagorean Triples and Congruent numbers</b> <u>Padmaprabha H.G.N.L. and Shanthidevi K.C.N.</u>
D-11	<b>Ranking Environmental Problems In Sri Lanka Using Crowd sourcing And Natural Language Processing</b> <u>Lakshika M.V.P.T. and Senanayake S.H.D.</u>
D-21	<b>An automated device to measure a fixed volume of a liquid</b> <u>Maduranga U.G.D., Abeywicrama S.S, Dharmarathna W.G.D. and Ranatunga E.M</u>
D-27	<b>ALow Cost Transportation Plan to a Garment Factory</b> <u>Dunuwila N.D.K.K. and Dr. Samarathunga D.M.</u>
D-28	<b>Analyze the physico-chemical quality of some consumer preferred plain set yoghurts sold in Matara municipal area of Sri Lanka: A case study.</b> <u>Wedage L.T., Amarathunga S.M., Hemamali K.K.G.U. and Jayasekara L.</u>
D-43	<b>A Preliminary Model of Predictive Text for Sinhala using N-gram Statistics</b> <u>Chanaka K.M.R., Lorensuhewa S.A.S. and Kalyani M.A.L</u>
D-49	<b>A novel device for bending PVC pipes for plumbing purposes</b> <u>N.A.A.K.Sanjaya, W.G.D. Dharmaratna, S.S. Abeywickrama and E. M. Ranatunga</u>
D-50	<b>Low-cost impedance spectroscopic system for investigation of solar cell characteristics.</b> <u>Ajward A.M. and Gunawardhana I.D.C.B.K</u>