

ISBN 978-955-644-039-3



Annual Research Session-2015

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Sabaragamuwa University of Sri Lanka

5th Annual Research Session, Belihuloya, Sri Lanka, 2015

Annual Research Session-2015

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Dr. M. S. M. Aslam

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Message from the Vice Chancellor
Sabaragamuwa University of Sri Lanka

“Ayubowan”

As the Vice-Chancellor of the Sabaragamuwa University of Sri Lanka, it is a great pleasure for me to extend my deepest appreciation for the 5th Annual Research Session (ARS). As one of the upcoming national Universities, contribution for the knowledge and partaking in anticipating development challenges of the nation and beyond through new research findings would be an inevitable. The University is proud to have this annual forum of the academic and students to present and disseminate their latest research findings while its celebrating 20th anniversary in this year. This also contributes immensely to enhance the research culture of the University.

Continuing the ARS ensure the leadership of the University to reach the status of research university in foreseeable future. In addition, this forum provides a greater opportunity for an interdisciplinary research dialogue for the academics and students from diverse fields. Holding the ARS with simple and charm manner convince the stakeholders and the University to establish an affordable path to continue the event without huge burdens. Including a keynote speech from an eminent scholar as role model enable the participants and contributors enhance their wisdom and virtue. The ARS also found as one of the important deliverables of the Centre for Research and Knowledge Dissemination. I also take this opportunity to appreciate and thank CRKD and the ARS committee for their tireless effort to make the 5th ARS a success.

Professor Chandana P. Udawatte

Vice-Chancellor

Sabaragamuwa University of Sri Lanka

Message from the Director

Centre for Research and Knowledge Dissemination

A great privilege to hold the 5th ARS ...

In marking the significance of the Annual Research Session (ARS), as the Director of Centre for Research and Knowledge Dissemination (CRKD) it is a privilege for me to extend this message on the 5th ARS of Sabaragamuwa University of Sri Lanka (SUSL). Research and Knowledge dissemination are the major and prime tasks of the university to determine the sustainability. Providing a platform for academic and students annually to disseminate their new research findings through the ARS shows the university's consistent encouragement and leadership towards its vision. Since the CRKD is the body purposefully established for the research and knowledge dissemination of SUSL, holding the 5th ARS marks the milestones in the successful journey. Besides, the ARS is becoming a well-recognized institutional stimuli to build the confidence and research culture among the growing academics and researchers. Hence a number of enthusiastic and energetic young researchers from diverse disciplines in the university proliferate the magnitude of the 5th ARS remarkably. Enabling the interdisciplinary networking and dialogue among the growing researchers widen the knowledge on research and sharpen creative thinking on research. Eventually this enables the university to create highly talented and well-informed staff and graduates to shoulder the development process while providing solution for unsolved problems. This also will be an opportunity for the CRKD to expand its resource base to serve for the stakeholders and wider community. The presence and keynote speech of the well-known scientist and eminent scholar in Sri Lanka helps the upcoming scholars and researchers to mould them to suite the future world. As the Director of the CRKD I really appreciate and acknowledge the leadership and guidance of the Vice-Chancellor, Prof. Chandana P. Udawatte, and the support of Registrar and Acting Bursar in holding the 5th ARS. I am also obliged to acknowledge the 5th ARS organizing committee specially the Chairman, Dr. Udeni Jayalal and Coordinator, Dr. Salinda Premadasa, for their untiring efforts to hold it through many challenges.

I extend my best wishes for the success of the 5th ARS while extending my gratitude for contributors and presenters.

Dr. M. S. M. Aslam

Director
Centre for Research and Knowledge Dissemination
Sabaragamuwa University of Sri Lanka

ARS 2015: Fifth Annual Research Session ***Sabaragamuwa University of Sri Lanka***

On behalf of the organizing committee of the 5th Annual Research Sessions, Sabaragamuwa University of Sri Lanka (SUSL), it is a great pleasure and a privilege to extend our welcome note to the Annual Research Session 2015 (ARS-2015). The ARS has certainly shaped-up the research landscape of the university over the last few years, with the influence and stimulation from many respected senior researchers in the university, paving way for further improvement.

This year, we are delighted to see fifteen members of the academic staff presenting their research findings of post-graduate studies conducted in and/or collaborating with esteemed universities five different countries, making ARS 2015 is a venue to share their significant findings to a multidisciplinary audience. The ARS 2015 is also enriched with a poster session of the best undergraduate research students identified by respective departments and the winner of the student of the year award at the 2014 general convocation.

We are indebted to our chief guest Prof. S.H.P. Parakrama Karunaratne for gracing this occasion with a keynote speech as well as the Vice-Chancellor and Director and the staff of the Centre for Research and Knowledge Dissemination for all their contributions. We would also like to make this an opportunity to express a huge 'thank you' to all who worked hand-in-hand to make this event a success. Although the utmost effort was taken to keep up to the promise of providing an innovative, informative and enjoyable experience, and a perfect way to give farewell to the year 2015 on an academic note, we sincerely apologise for any inconvenience caused in regard to the organizing of the ARS 2015.

Finally, we wish all the presenters as well as non-presenting researchers of SUSL all the success in their research endeavours, making 2016 a promising year to our research portfolio.

Dr. R. G. Udeni Jayalal - *Chairman*, Dr. H. K. Salinda Premadasa - *Coordinator*
ARS 2015 – Fifth Annual Research Session

Vital Role of Academic Researchers in Anticipating Developmental Challenges

Professor S. H. P. Parakrama Karunaratne

Director in National Institute of Fundamental Studies, Kandy, Sri Lanka.

The primary duty of a university lecturer is known to be teaching undergraduates and postgraduates. However, academics are bound to conduct a substantial amount of research work in their specialized subject areas. Research work is essential for the generation of new knowledge and to develop and maintain the recognition of the academic and the institution, and also for career development. Hirsch Index or 'H' index, based on the citations made for his/her publications, is one of the widely used measures to assess the performance of a researcher. Publication of novel research findings in higher impact journals while disseminating the research outcome through international and national research symposia should always be encouraged. Assessment of research output of an academic or an academic department or a university/institute can be done through 'H' index and other similar methods of evaluation. Discussions are currently being held for introduction of such tools to assess Sri Lankan academics.

UNESCO Institute for Statistics had estimated an average of 894 researchers in the world per million inhabitants in 2004. According to the National R&D survey of Sri Lanka, the country had only 278 researchers per million of the local population from 2009 – 2012, with only 111 on a full-time basis. This number is far below than that of the countries in this region. If Sri Lanka is to be, at least, on par with the world average, approximately 20,000 S&T research personnel are expected to be engaged in R&D. It has been estimated that only 25% of the university academics are involved in active research at present. Thus, it is important to essentially channel the R&D expenditure of the Higher Education sector to motivate the remaining 75% of the university-based researchers by providing adequate incentives, research funds and facilities, so that they may contribute to the R&D efforts of the country by conducting active research and become mentors of research based postgraduate degrees.

Identification of research areas anticipating developmental challenges is also of vital importance to the country. Mere research to get the number of publications increased, or for promotions, would not serve the country in facing the

developmental challenges. However, it is important to note that the knowledge-based basic research, which may have no apparent significance or justification for country's short-term development, is also important for the advancement of a knowledge-based society. Research by academics in a university not only contributes to the development of knowledge, but also helps to develop a research culture among colleagues and, postgraduate and undergraduate students. This contributes to the generation of human resources with innovative ideas which can be linked to the rapid economic development in the country.

Transfer of knowledge from the researcher to the end user, especially in the field of S&T, is a huge challenge itself. Very often, our researchers are satisfied once the results are published and not concerned about transferring the knowledge. Even if the enthusiasm for knowledge transfer is there, they are reluctant to join hands with companies and the companies, in turn, fear taking up such novel challenges/opportunities. Although there are established intermediate organizations to bridge the gap between the researcher and the private partner, the fear of not receiving the due credit lies within the researcher. However, few stories of success do exist in Sri Lanka, where the researchers have effectively transferred the research findings by commercializing the products for the benefit of the country and the society.

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