

**5<sup>th</sup> International Research Symposium – 2015**

***IntSym 2015***

**Emerging Trends and Challenges in  
Multidisciplinary Research**

**Proceedings – Full Papers**

**07<sup>th</sup> and 08<sup>th</sup> December 2015**



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**Message from the Chair**  
**5<sup>th</sup> International Symposium – 2015**  
**South Eastern University of Sri Lanka**

South Eastern University of Sri Lanka, one of the national universities in the country, is in the fore front in the region in research and development, innovation and dissemination. IntSym 2015, the fifth international symposium of the South Eastern University of Sri Lanka, is one of the major events organized in the Eastern Sri Lanka to facilitate dissemination of research findings. The theme of the fifth international symposium is “Emerging Trends and Challenges in Multidisciplinary Research” an important aspect in research which is focused nationally and globally. Multidisciplinary research brings different disciplines together to talk about issues from each of their perspectives where different disciplines may collaborate, but maintaining a separation of their disciplines within that process.

Researchers from different disciplines can initiate multidisciplinary research by simple teaming. Multidisciplinary research integrates data from different disciplines, incorporates different methodologies, and combines multiple perspectives and concepts to solve real world problems. Multidisciplinary research, therefore, requires either an individual researcher involves in two or more disciplines or two or more researchers bring together two or more different disciplines or multidisciplinary teams assemble and create a platform for discovery and innovation. Multidisciplinary research not only brings expertise together but also other limited resources in many contexts such as equipment, resources, time and motivation. Hence, multidisciplinary research leads to findings that exceed the possibilities of a uni-disciplinary research.

The steering committee of the international symposium has selected this timely theme in order to be on par with national and global trends and needs. This symposium allows the researchers, academics and students to share the novel findings of multidisciplinary research and development initiatives. This symposium will also provide ample opportunity to the participants to share knowledge and collaborate and network with different experts from different parts of the country and the globe. This symposium will emerge as a platform that encourages and enhances multiple disciplines to merge together to yield more and more fruitful research findings.

I wish to thank the organizing committee of the fifth international symposium of the South Eastern University of Sri Lanka for selecting an appropriate and timely theme for this year. I also wish to thank all others who have contributed to make this symposium a reality. I wish the fifth international symposium of the South Eastern University of Sri Lanka all the success.

Prof. M.M.M. Najim  
Vice Chancellor  
South Eastern University of Sri Lanka

**Message from the Symposium Committee**  
**5<sup>th</sup> International Symposium – 2015**  
**South Eastern University of Sri Lanka**

It is our great pleasure to write to the proceeding of the Fifth International Symposium 2015 (IntSym2015) South Eastern University of Sri Lanka. This is an immense opportunity for the academics, researchers, professionals, government official, policy makers and past graduate students to present their research findings and exchanging ideas and disseminating knowledge. This 5<sup>th</sup> International Symposium 2015 is a noble point to interchange knowledge and skills among researchers nationally and internationally.

Due to the success of the first four International Symposiums conducted by South Eastern University of Sri Lanka, Oluvil this year too our university planned to conduct the fifth International Symposium received enough number of papers in this regard.

The 5<sup>th</sup> International Symposium would have not been possible without the generous support and dedication made by many contributors. We would like to thank Prof. M.M.M. Najim, Vice Chancellor, South Eastern University of Sri Lanka for his guidance and encouragement. We are also grateful to Prof. U.S. Amarasinghe, Senior Professor, University of Kelaniya for accepting our invitation to deliver the keynote address at the Symposium.

We would like to thank all the committee members who involved in organizing the 5<sup>th</sup> International Symposium. And also we would like to take this opportunity to thank members of the International Advisory and Scientific Committee for always having been there when needed. We would like to acknowledge the track coordinators and express our special word of appreciation to the reviewers who have done timely review in order to make the submitted papers a quality one. We also appreciate the unwavering support given by the members of the editorial board. We would like to honestly acknowledge all the academic and non-academic staff members of the University for their cooperation in organizing the Symposium.

We wish all the presenters and participants a successful, informative, productive, and memorable day at the 5<sup>th</sup> International Symposium 2015, South Eastern University of Sri Lanka. Further, we render our heartiest thanks to everyone who take part in this International Symposium of South Eastern University of Sri Lanka.

We expect the cooperation and commitment of all of you in continuing research in future.

Dr. A.M.Muzathik, *FIMarEST*  
Coordinator, IntSym 2015  
South Eastern University of Sri Lanka

Dr. K. Komathiraj  
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**5<sup>th</sup> International Symposium – 2015 (*IntSym – 2015*)**  
**South Eastern University of Sri Lanka**

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