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## **Preface**

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In India, the annual number of road traffic fatalities has reached nearly 150,000, according to the data published by the Ministry of Shipping, Road Transport and Highways of India. Associated with the fatalities is also the seemingly disconcerting proportion of serious injuries suffered by pedestrians and vehicle occupants for which a reliable account is not available. Considering that India in recent times has been witnessing an explosive growth in motorised mobility systems including two-wheelers, passenger cars, sport-utility vehicles, and, even buses and light commercial vehicles, the issue of improving road safety by reducing accidents and life-threatening injuries has reached an utmost urgent stage.

In the USA, despite remarkable strides made in vehicle safety design and road infrastructure, the annual traffic fatalities have stagnated in recent years. It is generally believed that greater emphasis may need to be placed on active safety leading to higher accident avoidance. The need for active safety can in no way be overstated in India due to the extreme load of decision-making on a conservative driver of a car to protect against blind-spots and unexpected hazards on roads, besides pedestrians and dangerously manoeuvring vehicles and two-wheelers.

In the above backdrop, the ‘Indo–US Symposium on Preventing Road Crash Injury through Vehicle Safety Design’ was organised during 6–7 March 2012, in the Indian Institute of Science, Bangalore, India. It proved to be extremely useful and informative to bring together stakeholders from academia, automotive industry, traffic police, public transportation systems, and healthcare resulting in a unique congregation not usually seen in most symposia. Invited expert speakers from the USA and India covered a wide range of topics of direct relevance for preventing road crash injuries such as:

- Statistical analysis of accident data and epidemiology of injuries
- Occupant injury mechanisms in front and side collisions
- Roll-over safety

- Pedestrian impact protection countermeasures in commercial vehicles
- Structural impact, and vehicle crash safety design methodologies and solutions
- Impact biomechanics and injury prediction
- Human body finite element modelling
- Vehicle active safety design considerations and intelligent transportation systems

This special issue is intended to archive selected contributions from the invited speakers at the aforementioned Indo–US Symposium. The papers included here are based on both original research work and/or expert reviews on vehicle as well as road safety. The Co-Chairs of the symposium are deeply grateful to the Indo-US Science and Technology Forum (IUSSTF), New Delhi, for sponsoring the symposium. The Guest Editors would like to heartily thank Dr. Rajiv Sharma, Executive Director, IUSSTF, for his valuable encouragement and support, and Mr. R. Varadarajan, Head (F&A), IUSSTF, for his facilitation. It is sincerely hoped that the initiative put in place by the symposium would go a long way in fostering adoption of measures for minimising loss of lives in road mishaps involving motorised vehicles by leveraging the latest in design, science and technology in India and the world.