

Background :

One widely accepted strategy to reduce environmental load due to vehicles and enhance fuel economy is by making them lightweight. However, being lightweight also entails challenges in terms of functional performance in areas such as noise, vibration and harshness (NVH), crashworthiness, and durability. Perceptible reduction of weight of conventional vehicles without sacrificing functional targets requires extensive studies and new developments in vehicle structures of all kinds: body, housings of propulsion and transmission systems, suspension system components, and what not. Apart from strides required in materials and manufacturing, significant efforts are also expected to be invested by researchers and vehicle engineers in design methodologies, computer-aided engineering (CAE), and multidisciplinary design optimization (MDO). In order to provide a forum for speedy publications of advancements in the areas mentioned, the **International Journal of Vehicle Structures and Systems** (IJVSS) was founded.

IJVSS is a quarterly journal and is published by MechAero Foundation for Technical Research & Education Excellence (MAFTREE), based in Chennai, India. MAFTREE is engaged in the promotion and advancement of technical education and research in the field of mechanical, aerospace and other branches of engineering. IJVSS will endeavour to publish high quality original research and review papers, case studies, technical notes and book reviews. All published papers in this journal will have undergone rigorous peer review.

Scope :

The key objective of IJVSS is to disseminate the recent advances and research needs of the industries and institutions engaged in automotive, aerospace, marine and other transportation vehicle structures and systems. The prime focus is given to the subjects of modelling, analysis, design, simulation, optimization and testing of structures and systems of the following :

- Automotive vehicle including scooter, auto, passenger car, motor sport and racing vehicles
- Truck, trailer and heavy vehicles for road transport
- Rail, bus, tram, emerging transit and hybrid vehicle
- Terrain vehicle, armoured vehicle, construction vehicle and Unmanned Ground Vehicle.
- Aircraft, launch vehicle, missile, airship, spacecraft, space exploration vehicle, Unmanned Aerial Vehicle, Micro Aerial Vehicle.
- Marine vehicle, ship and yachts and under water vehicles.

The journal addresses the following topics:

- Vehicle structures: complete vehicle design, body-in-white (BIW), closures, and all systems (such as power train, steering, suspension, brakes, etc.) requiring stiffness, strength, vibration, and impact energy absorption considerations.
- Industrial design of vehicles including exterior and interior styling
- Design methodologies, processes and life cycle management
- Computer-aided design and engineering (CAD and CAE)
- Multidisciplinary design optimization (MDO)
- Knowledge-based methods in vehicle design
- Advanced materials and joining technologies
- Design for X (where X = NVH i.e. noise, vibration and harshness, packaging and ergonomics, crashworthiness and occupant safety, durability, vehicle dynamics, performance and fuel economy, aerodynamics and thermal

- management, sustainability/ recyclability, manufacturing feasibility, assembly and disassembly, etc.)
- Smart materials, sensors, actuators, microprocessors, etc. aiding in enhanced performance of vehicle systems
- Experimental calibration and measurements
- Active control and safety

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