



Dr. Sudhir Chandra Sur Institute of Technology and Sports Complex

Report of Seminar on Automobile Accident Analysis and Reconstruction: Investigation, Causes and Preventive Measures

Topic: Automobile Accident Analysis and Reconstruction: Investigation, Causes and Preventive Measures

Organized by: Department of Automobile Engineering, Dr. Sudhir Chandra Sur Institute of Technology and Sports Complex. (In Association with IQAC)

Speaker:

Mr. Animesh Roy, Team Leader, RASSI Crash Investigation, Kolkata, JP Research India Pvt. Ltd.

Mr. Prasun Das, Senior Crash Analyst & Centre Head, Kolkata, JP Research India Pvt Ltd.

Date: 1st October 2026

Time: 2:00 PM onwards

Mode: Offline, Room No.: 122

No. of Participation: 31

Introduction:

The Department of Automobile Engineering of Dr. Sudhir Chandra Sur Institute of Technology and Sports Complex, in association with IQAC, organized a seminar on “Automobile Accident Analysis and Reconstruction: Investigation, Causes and Preventive Measures” on 1st October 2026.

The seminar was organized with the objective of providing students with an understanding of the principles and practices involved in automobile accident investigation and reconstruction. The session focused on systematic investigation of road accidents, identification of accident causes, analysis of vehicle and road-related factors, reconstruction of accident events, and preventive measures for improving road safety.

The programme aimed to enhance students’ technical knowledge regarding accident investigation and provide them with practical insights into the methods used for understanding accident sequences and determining contributing factors. It also provided an opportunity for students to understand the importance of vehicle safety, responsible driving, traffic discipline, and engineering measures in reducing road accidents.

Background:

Road traffic accidents are a major concern associated with modern transportation systems. Automobile accidents may occur due to a combination of factors involving the driver, vehicle, road, traffic environment, and surrounding conditions. A systematic investigation of an accident is therefore essential for identifying its causes, understanding the sequence of events, and developing appropriate preventive measures.

Automobile accident analysis and reconstruction involve the examination of accident scenes, vehicles, physical evidence, skid marks, vehicle damage, road conditions, and other relevant information. The collected evidence can be used to understand vehicle movements, collision characteristics, and the sequence of events leading to an accident.

For Automobile Engineering students, knowledge of accident analysis and reconstruction is particularly relevant to understanding vehicle dynamics, braking and steering systems, crash behaviour, vehicle safety, road safety engineering, and accident prevention. It also provides exposure to professional practices associated with automobile accident investigation and forensic analysis.

Objectives:

The primary objectives of the seminar were:

- To provide students with an overview of automobile accident investigation and reconstruction.
- To familiarize students with the major causes and contributing factors associated with road traffic accidents.
- To explain the importance of systematic accident scene investigation and evidence collection.
- To introduce the basic principles and methods used in automobile accident reconstruction.
- To develop an understanding of vehicle, driver, road, and environmental factors involved in accidents.
- To explain the significance of vehicle damage, skid marks, collision evidence, and accident scene characteristics in accident analysis.
- To create awareness about road safety, defensive driving, traffic discipline, and preventive measures.
- To enhance students' understanding of the role of automobile engineering in accident investigation and road safety.
- To provide awareness about professional and career opportunities related to accident investigation, vehicle safety, insurance, and forensic accident analysis.

Overview of the Seminar:

The seminar commenced with an introductory discussion on automobile accident investigation and the significance of accident reconstruction in understanding road traffic accidents. The participants were introduced to the systematic approach followed during accident investigation and the importance of collecting and analyzing physical evidence from an accident scene.

Key highlights of the session included:

- ❖ **Introduction to Automobile Accident Analysis:** The session introduced the fundamental concepts of automobile accident analysis and its importance in determining the circumstances and causes of road accidents. The participants were made aware of the need for systematic investigation rather than relying only on eyewitness accounts.
- ❖ **Causes and Contributing Factors of Accidents:** The discussion covered various factors that may contribute to road accidents, including driver behaviour, vehicle condition, road characteristics, traffic conditions, weather, visibility, and other environmental factors. The importance of identifying the interaction between these factors was emphasized.

- ❖ **Accident Scene Investigation:** The participants were introduced to the importance of proper accident scene examination. The session highlighted the collection and documentation of relevant physical evidence, including vehicle positions, road marks, debris, vehicle damage, road geometry, and other accident-scene characteristics.
- ❖ **Vehicle Damage and Collision Analysis:** The seminar discussed the importance of examining vehicle damage to understand the nature and characteristics of a collision. The participants were introduced to the relevance of damage patterns, impact locations, and vehicle deformation in analyzing the sequence and severity of an accident.
- ❖ **Skid Marks and Physical Evidence:** The significance of skid marks, tyre marks, debris patterns, and other physical evidence in accident reconstruction was explained. The discussion highlighted how such evidence can assist investigators in understanding vehicle movement and braking conditions before a collision.
- ❖ **Accident Reconstruction:** The session introduced the basic principles of accident reconstruction and the systematic analysis of available evidence to determine the probable sequence of events. The importance of vehicle dynamics, speed, direction of travel, braking, collision characteristics, and scene measurements was highlighted.
- ❖ **Driver and Human Factors:** The seminar emphasized the role of human factors in road accidents. Issues such as driver attention, speed, reaction, driving behaviour, fatigue, distraction, and compliance with traffic rules were discussed as important aspects of accident investigation.
- ❖ **Vehicle Safety and Preventive Measures:** The importance of vehicle safety systems and proper vehicle maintenance in preventing accidents and reducing accident severity was discussed. The session also highlighted the role of braking systems, tyres, steering systems, lighting, occupant protection systems, and other safety features.
- ❖ **Road Safety and Accident Prevention:** The participants were made aware of the importance of responsible driving, adherence to traffic regulations, appropriate speed, use of safety equipment, road discipline, and awareness of surrounding traffic conditions. Engineering and behavioural measures for accident prevention were also discussed.
- ❖ **Practical and Professional Applications:** The seminar provided students with an understanding of the practical applications of automobile accident analysis in areas such as vehicle safety, insurance assessment, accident investigation, legal proceedings, forensic analysis, and road safety management.
- ❖ **Career Opportunities:** The session highlighted the relevance of accident investigation and reconstruction knowledge for Automobile Engineering graduates. Potential professional areas include automobile accident investigation, vehicle inspection, insurance assessment, vehicle safety, forensic engineering, road safety, automobile testing, and related automotive engineering fields.

Learning Outcomes:

The seminar enriched participants with the following takeaways:

- ❖ **Accident Investigation:** Developed an understanding of the systematic approach to automobile accident investigation.

- ❖ **Accident Causes:** Gained knowledge of the major driver, vehicle, road, and environmental factors contributing to road accidents.
- ❖ **Scene Analysis:** Improved understanding of the importance of accident scene examination and evidence collection.
- ❖ **Vehicle Damage Analysis:** Developed awareness of how vehicle damage and collision characteristics can assist in accident reconstruction.
- ❖ **Physical Evidence:** Gained familiarity with the significance of skid marks, tyre marks, debris, vehicle positions, and other physical evidence.
- ❖ **Accident Reconstruction:** Developed a basic understanding of the principles involved in reconstructing the sequence of events leading to an accident.
- ❖ **Vehicle Safety:** Enhanced awareness of vehicle safety systems, maintenance, and engineering measures for reducing accident severity.
- ❖ **Road Safety:** Developed awareness regarding responsible driving, traffic discipline, defensive driving, and accident prevention.
- ❖ **Technical Application:** Enhanced understanding of the application of automobile engineering principles in accident investigation and reconstruction.
- ❖ **Career Awareness:** Gained awareness of professional opportunities in accident investigation, vehicle safety, insurance, forensic engineering, and road safety.

Conclusion:

The seminar on “Automobile Accident Analysis and Reconstruction: Investigation, Causes and Preventive Measures” was an informative academic initiative organized by the Department of Automobile Engineering in association with IQAC, Dr. Sudhir Chandra Sur Institute of Technology and Sports Complex.

The programme focused on the systematic investigation and analysis of automobile accidents, identification of contributing factors, accident scene examination, vehicle damage analysis, physical evidence, and the basic principles of accident reconstruction. The discussion also emphasized the importance of understanding driver behaviour, vehicle condition, road characteristics, and environmental factors in determining accident causes.

The seminar provided students with an opportunity to strengthen their understanding of the practical application of automobile engineering principles in accident investigation and road safety. It also highlighted the importance of vehicle safety, responsible driving, traffic discipline, proper vehicle maintenance, and engineering interventions for preventing road accidents and reducing their severity.

Overall, the seminar served as an effective platform for connecting academic knowledge with practical aspects of automobile accident investigation and road safety. It enhanced students’ awareness of accident analysis and reconstruction and encouraged them to explore further learning and professional opportunities in vehicle safety, accident investigation, insurance, forensic engineering, and road safety management.



Seminar on “Automobile Accident Analysis and Reconstruction: Investigation, Causes and Preventive Measures” conducted by the department of Automobile Engineering in association with IQAC on 01/10/2026