



CONFÉRENCE TECHNIQUE - (SEMINAR)

Material Fracture Simulations in Automotive Structures Design for CrashWorthiness

Dr S. Bhattacharjee , Ford Motor Company, USA

- **Date : Jeudi le 1^{er} décembre** **BIENVENUE À TOUS**
- **Heure : 12 :30 – 13 :30**
- **En ligne - Zoom**

<https://polymtl-ca.zoom.us/j/84113290887?pwd=RE5nSS95TW9MUjVhaWxwU1hONnVEZz09>

Meeting ID: 841 1329 0887

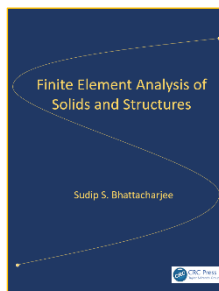
Passcode: 279863

Abstract : Automotive structures are traditionally constructed with thin-walled sheet metals that are expected to provide sustained resistance to severe geometric deformation during crash events. General design practices predict structural crush strength assuming progressive folding of ductile steel and aluminum sheet metals. However, cracking may appear in thin walls, under impact loading conditions, specifically for high strength extruded and cast aluminum products that are increasingly being introduced in automotive structures. Objective of this presentation is to summarize the current trend in industrial applications, and research opportunities in nonlinear finite element methods for simulating the material fracture response and its effects on automotive structure design for crashworthiness.

About the Speaker: Dr. Sudip Bhattacharjee is a 'supervisor' for vehicle crashworthiness engineering in Ford Motor Company, USA. He is also an occasional graduate course instructor at the University of Windsor, Canada, and the University of Michigan, Dearborn, USA.



Prior to joining Ford in 2000, Dr. Bhattacharjee was a faculty member at the University of Windsor (1998-2000), a consulting engineer with SNC-Lavalin in Montreal (1995-1997), and a post-doctoral research fellow at Ecole Polytechnique of Montreal (1993-1995). He received his Ph.D. from McGill University, Montreal, in 1993.



Dr. Bhattacharjee has strong records of teaching and research excellence in the analysis & design of automotive structures, finite element methods, structural dynamics, vehicle crashworthiness, fracture mechanics, fatigue, statistics & six sigma tool applications. He is author of the book "Finite Element Analysis of Solids and Structures", published by CRC Press in July 2021.