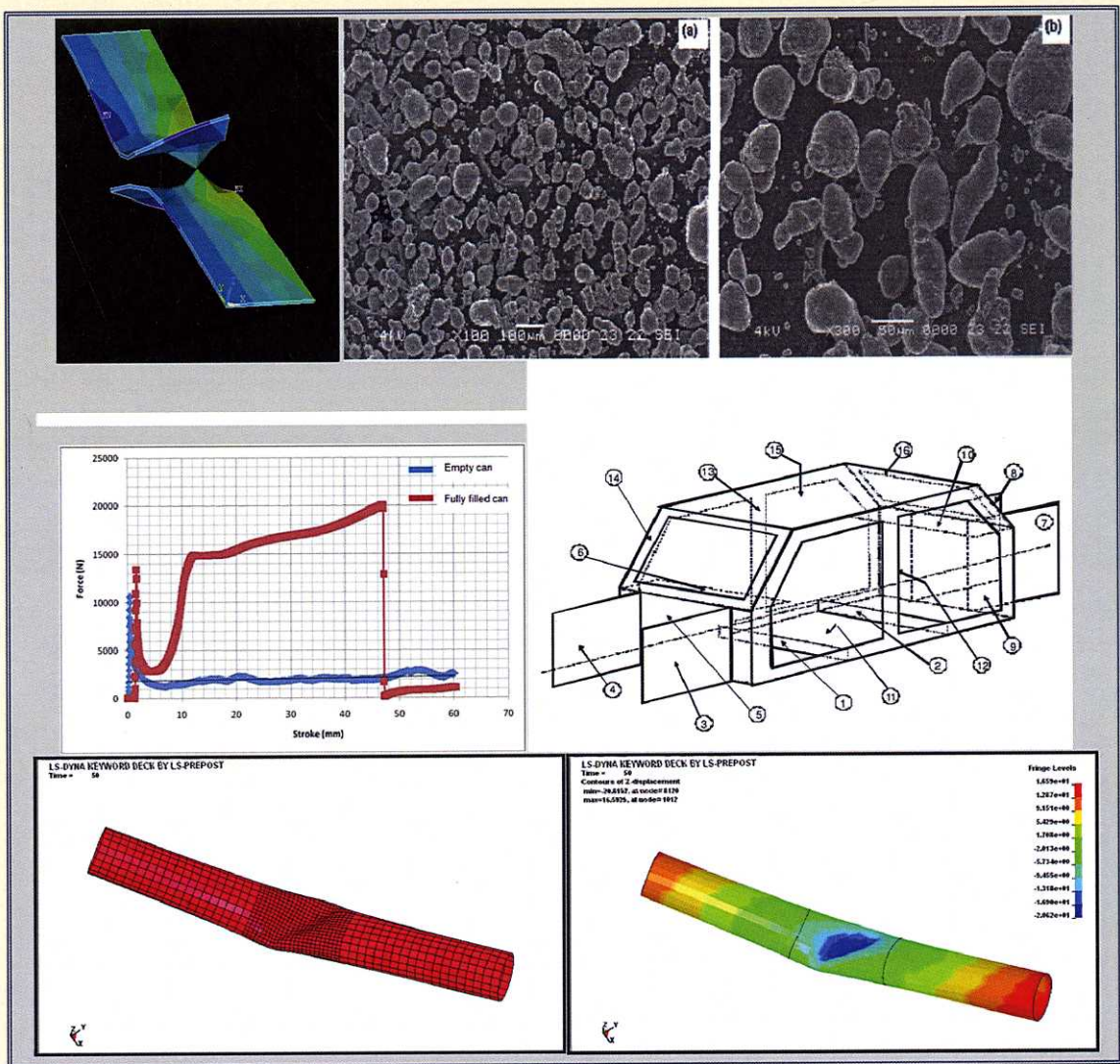


ADVANCED TOPICS IN MECHANICAL BEHAVIOR OF MATERIALS



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Meftah Hrairi



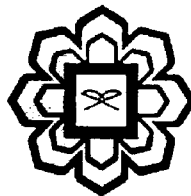
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Meftah Hrairi



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Contents

Preface.....	x
Acknowledgments	xii
Editor.....	xiv
Contributors	xvi

Section 1 Buckling

1	Cylindrical Shell Buckling Under Axial Compression Load	3
	<i>Qasim H. Shah, Hasan M. Abid, Abid B. Rosli</i>	
2	Experimental Setup of Empty and Water Filled Cylindrical Shell Buckling	8
	<i>Qasim H. Shah, Hasan M. Abid, Adib B. Rosli</i>	
3	Experimental Results of Empty and Water Filled Cylindrical Shell Buckling	13
	<i>Qasim H. Shah, Hasan M. Abid, Adib B. Rosli</i>	
4	Experimental Results of Empty and Water Filled Cylindrical Shell Buckling for 50mm Stroke	18
	<i>Qasim H. Shah, Hasan M. Abid, Adib B. Rosli</i>	
5	Experimental Results of Empty and Water Filled Cylindrical Shell Buckling for 60mm Stroke	24
	<i>Qasim H. Shah, Hasan M. Abid, Adib B. Rosli</i>	
6	Simulation Setup of Empty and Water Filled Cylindrical Shell Buckling	30
	<i>Qasim H. Shah, Hasan M. Abid, Adib B. Rosli</i>	
7	Simulation Results of Empty and Water Filled Cylindrical Shell Buckling	35
	<i>Qasim H. Shah, Hasan M. Abid, Adib B. Rosli</i>	
8	Experimental and Simulation Results of Cylindrical Shell Buckling	41
	<i>Qasim H. Shah, Hasan M. Abid, Adib B. Rosli</i>	
9	Buckling and Crush Analysis of Light Weight Structure	48
	<i>Kassim A. Abdullah and Wan Nur Hidayah Wan Sulaiman</i>	
10	Analysis of Lightweight Structural Tubes for Crashworthy Car Body	54
	<i>Kassim A. Abdullah and Zahra Roslan</i>	

Section 2 Impact

11	Pipe Whip Impact	61
	<i>Qasim H. Shah, Hasan M. Abid, Adib B. Rosli</i>	
12	Experimental Setup of Pipe Whip Impact	66
	<i>Qasim H. Shah, Hasan M. Abid, Adib B. Rosli</i>	

13	Experimental Results of Pipe Whip Impact	71
	<i>Qasim H. Shah, Hasan M. Abid, Adib B. Rosli</i>	
14	Simulation Setup of Pipe Whip Impact	77
	<i>Qasim H. Shah, Hasan M. Abid, Adib B. Rosli</i>	
15	Simulation Results of Pipe Whip Impact at 55° Angle	82
	<i>Qasim H. Shah, Hasan M. Abid, Adib B. Rosli</i>	
16	Simulation Results of Pipe Whip Impact at 90° Angle	87
	<i>Qasim H. Shah, Hasan M. Abid, Adib B. Rosli</i>	
17	Failure Mechanism of PC Armor Plates with PMMA Sacrificial Layer Subjected to Impact	93
	<i>Qasim H. Shah, Hasan M. Abid, Adib B. Rosli</i>	
18	Damage of Polycarbonate Armor Plate Subjected to Impact	106
	<i>Qasim H. Shah, Hasan M. Abid, Adib B. Rosli</i>	
19	Finite Element to Predict Damage of a Polycarbonate Armor Plate Subjected to Impact	112
	<i>Qasim H. Shah, Hasan M. Abid, Adib B. Rosli</i>	
20	Energy Absorbing Capability of Materials Subjected to Impact Under Gravity Loading	120
	<i>Qasim H. Shah, Hasan M. Abid, Adib B. Rosli</i>	
21	Damage Assessment of Liquid Filled Container Subjected to Free Fall on Rigid Steel Plate	127
	<i>Qasim H. Shah, Hasan M. Abid, Adib B. Rosli</i>	
22	Numerical Analysis of Materials Energy Absorbing Capability Under Gravity Loading Impact ..	134
	<i>Qasim H. Shah, Hasan M. Abid, Adib B. Rosli</i>	
23	Numerical Assessment of Liquid Filled Container Subjected to Free Fall on Rigid Steel Plate	141
	<i>Qasim H. Shah, Hasan M. Abid, Adib B. Rosli</i>	

Section 3 Design and Manufacturing

24	Overview of the Powder Metallurgy Process	151
	<i>Meftah Hrairi, Asmu'i Hussi, Fadzly Mohamad Ravi</i>	
25	Mechanical Properties of Sintered Aluminum Alloy Compacts	156
	<i>Meftah Hrairi, Fadzly Mohamad Ravi</i>	
26	Numerical Simulation of Green Compacts	161
	<i>Meftah Hrairi, Asmu'i Hussin</i>	
27	Experimental Studies of Dieless Forming	167
	<i>Meftah Hrairi, Saiful Mazwan Navi</i>	
28	Study of Spot Welding Process	172
	<i>Meftah Hrairi, Fatimah Jamil</i>	
29	General Framework for Inverse Identification of Consecutive Parameters	177

30	Inverse Parameter Identification of Elastic and Inelastic Constitutive Material Models	183
	<i>Meftah Hrairi</i>	
31	Enhancing Magnetic Particle Testing of Automotive Parts	189
	<i>Meftah Hrairi, Salah Echraf</i>	
32	Design and Fabrication of the Testing Model of the Vehicle Structure Test System	196
	<i>Kassim A. Abdullah and Cheah Siew Loong</i>	
33	Design Analysis of Laminated Composite Ladder Chassis Frame of Light Truck	202
	<i>Kassim A. Abdullah and Mohd Zaimi bin Rosli</i>	
34	Design and Development of Driving System for Disabled Driver	208
	<i>Kassim A. Abdullah, J.S. Mohamed Ali, Mohd Azlan bin Habeeb Rahmathullah, Ruzael Amir Afendi b. Kaharuddin</i>	

Section 4 Liquid Sloshing

35	Liquid Sloshing	215
	<i>Qasim H. Shah, Hasan M. Abid, Adib B. Rosli</i>	
36	Experimental Study of Liquid Slop Dynamics in a Half Filled Cylindrical Tank	220
	<i>Qasim H. Shah, Hasan M. Abid, Adib B. Rosli</i>	
37	Experimental Results of Liquid Slop in a Cylindrical Tank with Different Fill Levels	226
	<i>Qasim H. Shah, Hasan M. Abid, Adib B. Rosli</i>	
38	Simulation Model of 3D Liquid Slop in a Partially Filled Cylindrical Tank	233
	<i>Qasim H. Shah, Hasan M. Abid, Adib B. Rosli</i>	
39	Simulation Results of Liquid Slop in a Partially Filled Cylindrical Tank	238
	<i>Qasim H. Shah, Hasan M. Abid, Adib B. Rosli</i>	
40	Numerical and Experimental Results of Liquid Slop in a Partially Filled Cylindrical Tank	242
	<i>Qasim H. Shah, Hasan M. Abid, Adib B. Rosli</i>	
	Index.....	247

EXPERIMENTAL RESULTS OF PIPE WHIP IMPACT*Qasim H. Shah, Hasan M. Abid, Adib B. Rosli***1. INTRODUCTION**

Pipe whip is a safety related issue for nuclear power and chemical plants, where pipes are often used to transport fluids at high pressure and high temperature. Experiment works for empty pipe and liquid filled pipe are needed in this study. The model was made of simple pipe whip system which enables the missile pipe to hit the target pipe at an angle of 90° and also 55° oblique impact. The results of the experiments show the possible damage and failure of different types of pipe whip with different fill conditions.

2. RESULTS**2.1 Small Diameter Pipe**

The result from Table-1 is taken from the impact test for the smaller target pipes done. This experiment would test for the closed empty, open empty and filled with liquid of the target pipe. Each testing we done for many times to get the best result and we compare it after the experiment was done. The specifications set for the target pipes, projectile pipes and dropper are shown below;

Target Pipe;

Material: Copper; Original diameter = 22.22 mm; Thickness = 0.71 mm

Length = 300 mm

Projectile Pipe;

Outer diameter = 27.3 mm; Inner diameter = 22.0 mm; Thickness = 2.65 mm

Length = 345.0 mm

Dropper;

Drop height = 2375.0 mm; Drop weight = 3.22 kg;