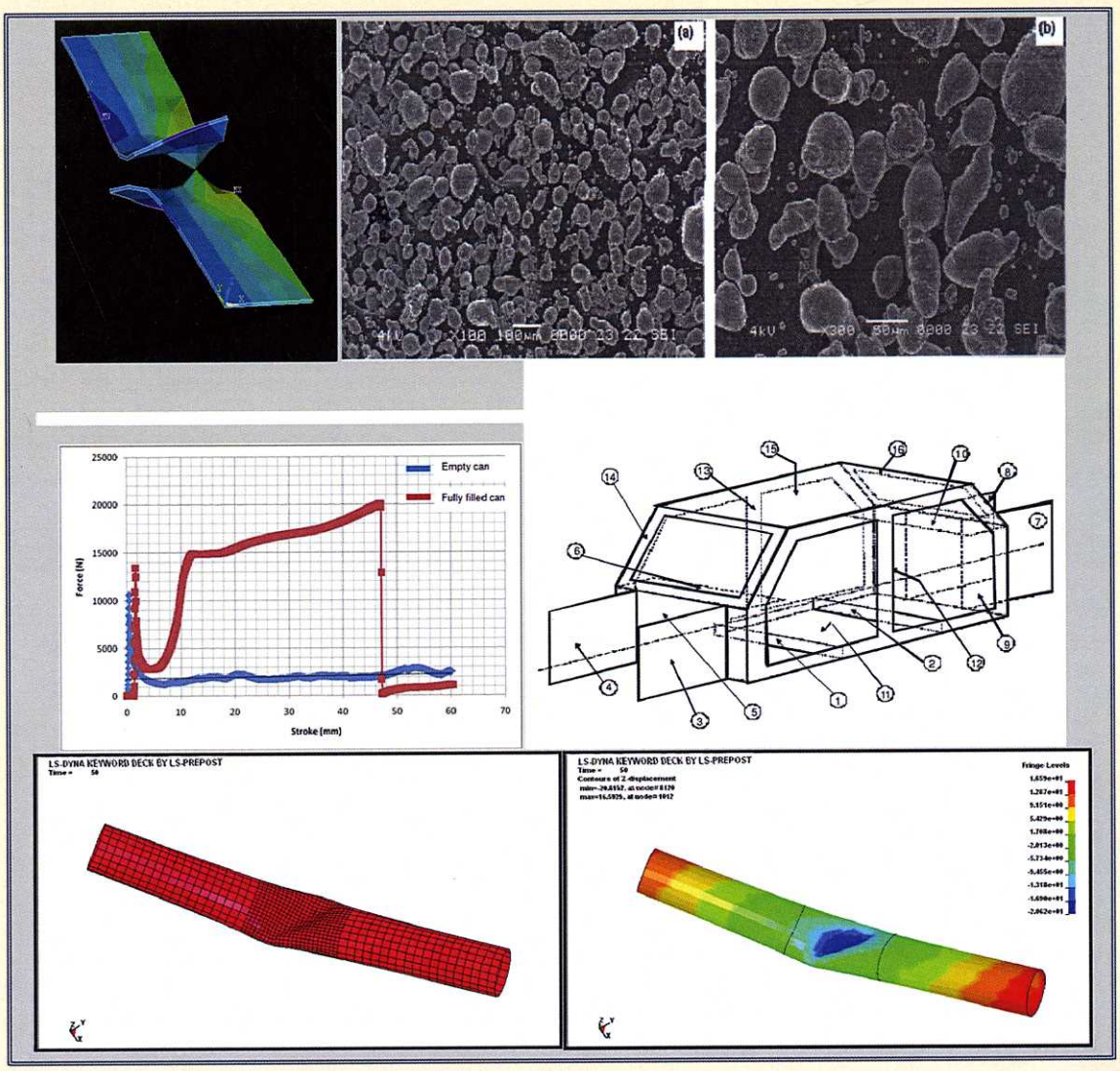
ADVANCED TOPICS IN MECHANICAL BEHAVIOR OF MATERIALS



Edited by

Meftah Hrairi

IIUM PRESS
INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA

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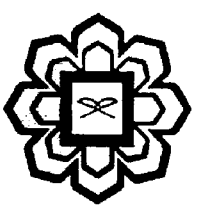

IIUM Press

Published by:
IIUM Press
International Islamic University Malaysia

First Edition, 2011

Perpustakaan Negara Malaysia Cataloguing-in-Publication Data

ISBN: 978- 967-418-174-1

Member of Majlis Penerbitan Ilmiah Malaysia – MAPIM
(Malaysian Scholarly Publishing Council)

Printed by :
IIUM PRINTING SDN. BHD.
No. 1, Jalan Industri Batu Caves 1/3
Taman Perindustrian Batu Caves
Batu Caves Centre Point
68100 Batu Caves
Selangor Darul Ehsan

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EXPERIMENTAL SETUP 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 possible damages occur on the target pipe when the missile pipe hit it at certain velocity depend on the different mass of dropper and different diameter of the target pipe. Copper pipe is used as the target pipe and steel as the missile pipe.

2. DESIGN OF THE PIPE WHIP SYSTEM

To make our own pipe whip system, we designed the frame by using CATIA software. After that, we assembled the missile pipe and target pipe together with the frame and rotating steel pipe that holds the missile pipe in place. After designing using the pipe whip system using CATIA, we bought the equipments needed to fabricate it. We used L bar, steel pipe and bearing. Several L bars were welded together to make the frame.

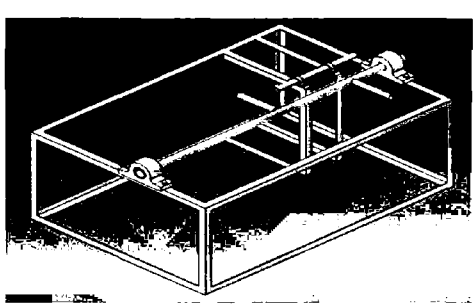

Figure 1 Design of the frame using CATIA