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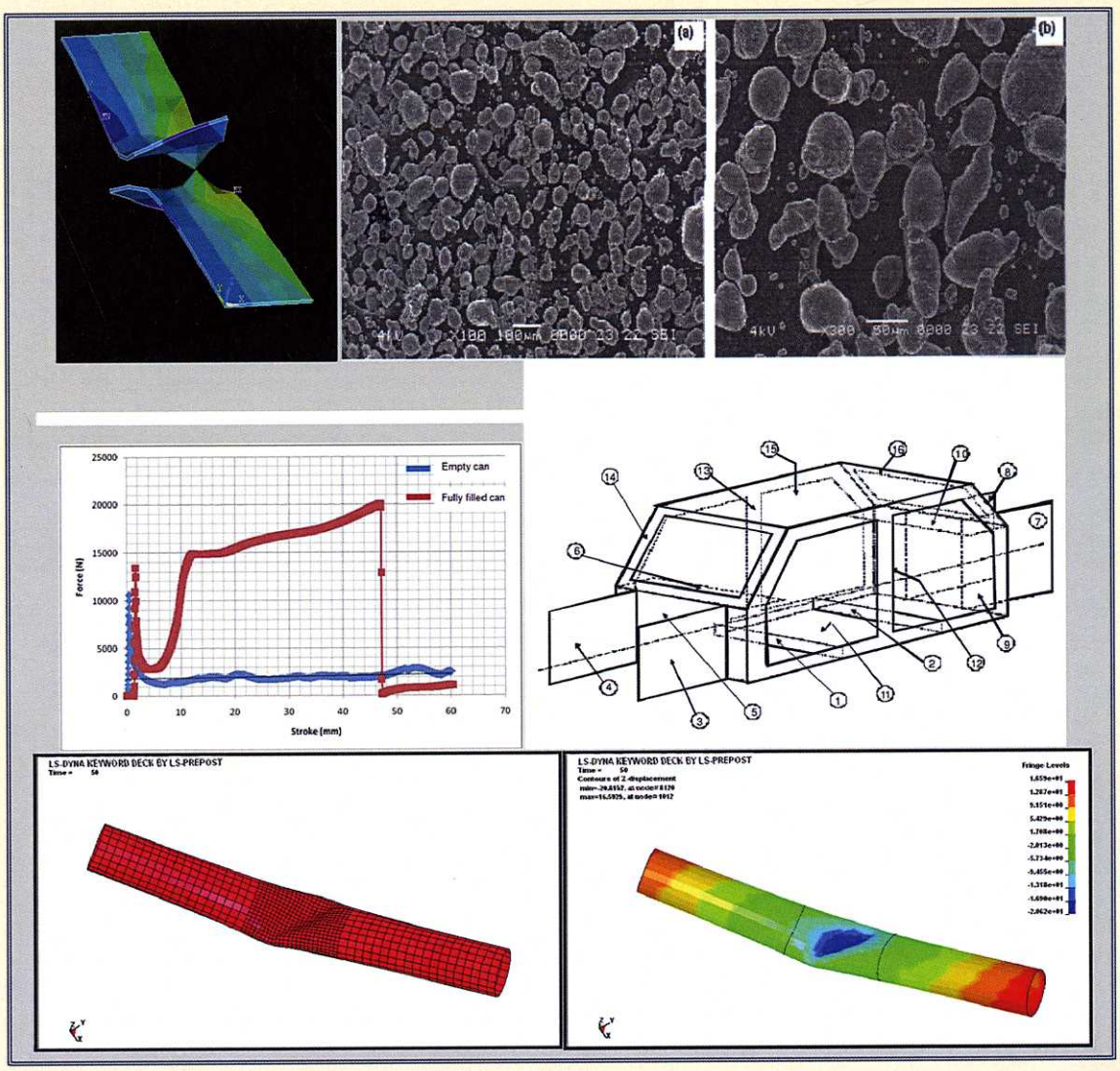

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Meftah Hrairi

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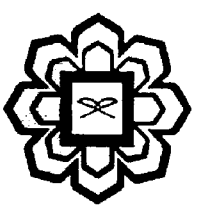

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EXPERIMENTAL RESULTS OF PIPE WHIP IMPACT

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;