

### Finite Element Modeling

To use the finite element software a validation process are made by applying this software on the Pb-Sn alloy matrix composites reinforced with different volume percents of SiCp to predict the deformation and tensile behaviour. The predicted results and the experimental results then compared to validate the software. , Impact dynamic program version 0.7.1 simulated the impact tests. In simulation process the program input were the specimen geometric, alloy type and SiC weight percent. The output is the impact energy (J) in each case. The predicted impact energies at different alloy kinds show a good agreement with the experimental impact energies figure (2) represent the relation between the experimental and predicted impact energies. This result is consistent with that

resulted by Hoffman et al [4]. They proved that the prediction for the impact of the reinforced metal matrix composites by different finite element analysis codes was consistent with experimental data.

### Impact tests simulation for A355

In the investigation, Impact dynamic program version 0.7.1 simulated the impact tests for A355 reinforced with different weight percentage of SiC particles. In simulation process the program input were the specimen geometric, alloy type and SiC weight percent. The output is the impact energy (J) in each case. The results show that the impact energy decreases by increasing the volume fraction. The extrusion process improves the impact energy of the composites. Figure (3-5) repre-

