Figure (6): Predicted impact energy of

A356

at liquid fraction 65%

at liquid fraction 45%

at liquid fraction 75%

## Discussion

The results obtained from the finite element modelling of the behaviour of A355 and A356 alloy matrix composites for the effects of the percentage of liquid material. The investigations shown that the impact energy of the composites less than the base alloy. Many investigators [5,6,7] showed that the effect of volume fraction of the reinforcement particles in the percentage of the impact energy of the composites.   The results of the finite element simulations for Pb-Sn alloy matrix composites show good agreement with the experimental results . This result is consistent with that resulted by Chen J.M. et al. [5]. They proved that the prediction for the mechanical properties of the reinforced metal matrix composites as cast and as extruded by

finite element simulation revealed good agreement with experimental data.

**Conclusions**

This investigation on the extrusion of particle reinforced aluminum alloy was conducted by using finite element conclusions can be summarized as follows:

1.  Very good agreement is obtained between the predicted values from neural network modeling and experimental results for the Pb-Sn alloy matrix composite.

2.  Impact energy decreases by increasing the volume fraction of particles.

3.  The highest impact energy value was obtained at 10% SiC .

4.  The highest impact energy value was obtained when the liquid fraction was 55%

## References

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