# Article information:

Ductile fracture of solder-Cu interface and inverse identification of its interfacial model parameters - ScienceDirect  
<https://www.sciencedirect.com/science/article/pii/S0167663617303526>

# Article summary:

1. This paper investigates the fracture of SAC305-Cu interfaces under mode 1 and mode 2 loading conditions, analyzing their microstructures before and after failure.

2. An improved cohesive zone model is used to simulate interfacial failure, and an inverse analysis method based on the Kalman filter algorithm and response surface interpolation technique is developed to identify its parameters.

3. A range-reduced inverse analysis scheme is also developed to reduce numerical errors when large plastic deformation of solder occurs or parameter searching ranges are set over-large.

# Article rating:

Appears well balanced: The article presents the information in a reliable and balanced way, without biases and prejudices. The claims made in the article are well supported and, where applicable, all sides of the argument are given opportunity to present their point of view. The article appears trustworthy and reliable.

# Article analysis:

The article “Ductile Fracture of Solder-Cu Interface and Inverse Identification of Its Interfacial Model Parameters” provides a comprehensive overview of the fracture mechanisms of solder joints under different loading conditions, as well as an improved cohesive zone model for simulating interfacial failure. The authors have also developed an inverse analysis method based on the Kalman filter algorithm and response surface interpolation technique, as well as a range-reduced inverse analysis scheme to reduce numerical errors when large plastic deformation of solder occurs or parameter searching ranges are set over-large.

The article appears to be reliable in terms of its content, with no obvious biases or unsupported claims present. The authors provide detailed descriptions of their experiments and simulations, as well as thorough explanations for their results. They also discuss potential risks associated with their methods, such as numerical errors due to large plastic deformation or overly large parameter searching ranges. Furthermore, they provide evidence for their claims by verifying them using both pseudo and real experimental data.

In general, this article appears to be trustworthy and reliable in terms of its content. It presents both sides equally without any promotional content or partiality towards one side over the other. The authors have provided sufficient evidence for their claims and discussed potential risks associated with their methods in detail.

# Topics for further research:

* Solder-Cu interface fracture
* Cohesive zone model
* Kalman filter algorithm
* Response surface interpolation
* Plastic deformation of solder
* Parameter searching ranges

# Report location:

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