

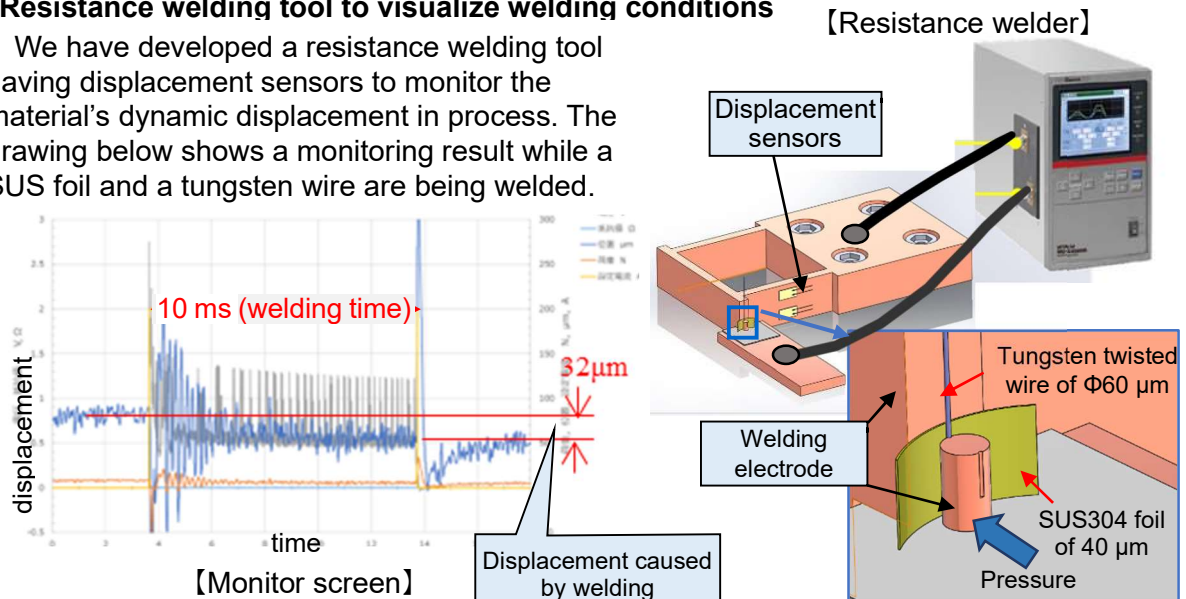
Visualizing Welding Conditions of Dissimilar Metals in Situ

1. Resistance welding of dissimilar materials

Utilizing joining technique for dissimilar materials is often required for cost reduction and higher functionality. We have developed a technology to visualize the welding conditions in process to improve the welding quality and productivity.

2. Resistance welding tool to visualize welding conditions

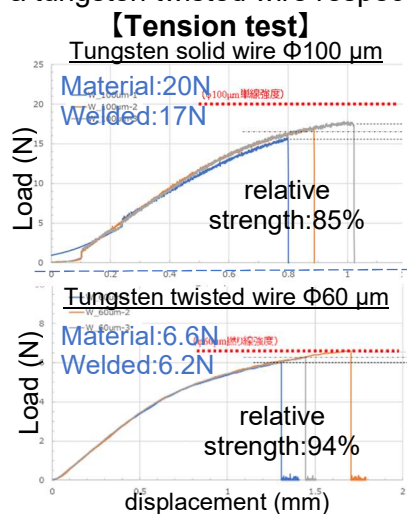
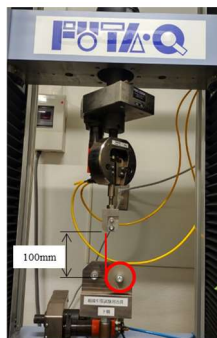
We have developed a resistance welding tool having displacement sensors to monitor the material's dynamic displacement in process. The drawing below shows a monitoring result while a SUS foil and a tungsten wire are being welded.



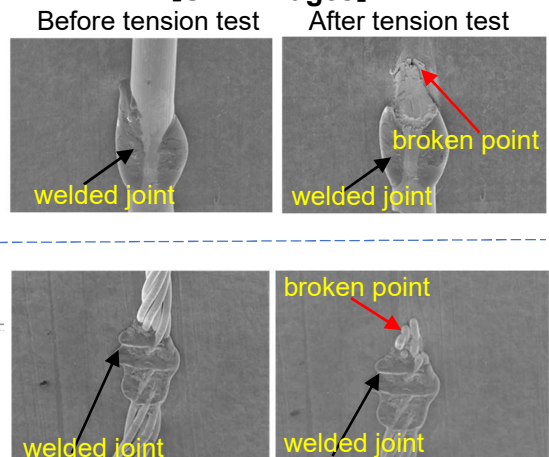
3. Visualizing examples and the evaluation

- 1) Molten SUS covering around the tungsten wire makes secure the welded joint.
- 2) The breaking strengths of the welded part compared to that of the original tungsten wire measured by a tension tester are 85% and 94 % for $\Phi 100 \mu\text{m}$ of a tungsten solid wire and $\Phi 60 \mu\text{m}$ of a tungsten twisted wire respectively.

【Tension tester】



【SEM images】



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