

Aluminum recycling technology

Detoxification of impurities using cavitation

Overview

Improving the recycling rate of aluminum (Al) is becoming more important. Recycled Al contains impurities such as iron, silicon, and zirconia, which form intermetallic compounds (IMC) and reduce its mechanical strength.

Conventional methods use ultrasonic vibrations to refine these compounds, but scaling up the process remains a challenge.

To solve it, the inventor has invented a machine that applies cavitation treatment to molten recycled Al. This simple machine design makes it easier to scale up and use in industrial applications compared to conventional methods.

Experimental results showed that the machine effectively refined IMC and improved the strength of recycled Al. This invention could significantly advance aluminum recycling.

Product Application

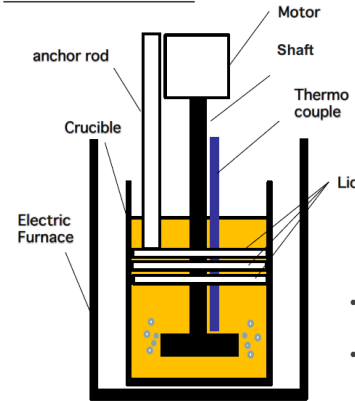
- Recycled aluminum processing machine

IP Data

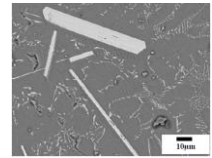
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Admin No.: T21-372

Features · Outstandings

○ Invention



IMC



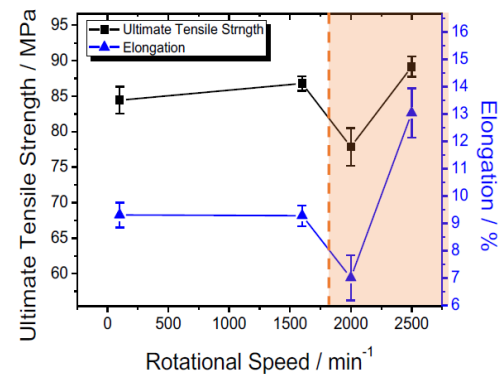
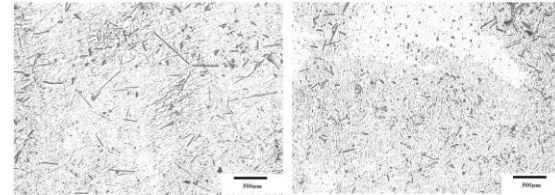
Needle shaped

- Rotating the disk in molten metal
- Cavitation refines IMC

○ Results

Before cavitation

After cavitation



Improvement

- Tensile strength
- Elongation

Contact

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