



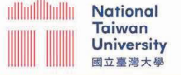
2024「中技社科技獎學金」

2024CTCI Foundation Science and Technology Scholarship

研究獎學金
Research Scholarship

Microstructures and Mechanical Properties Investigations on High-Strength Al-Cu-Mg-(Ag) Aluminum Alloys and Light-Weight CoCrNi-(Si) Medium Entropy Alloys

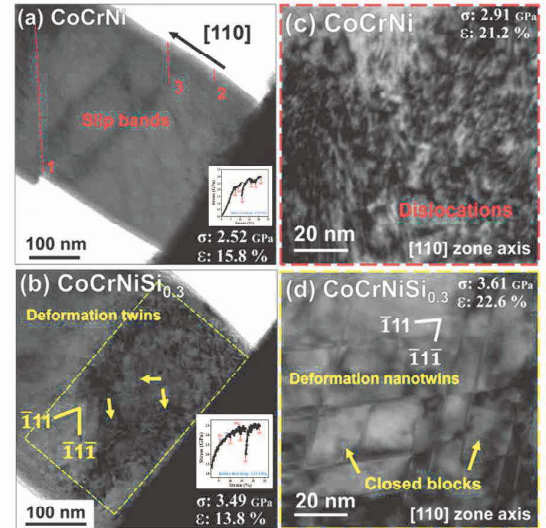
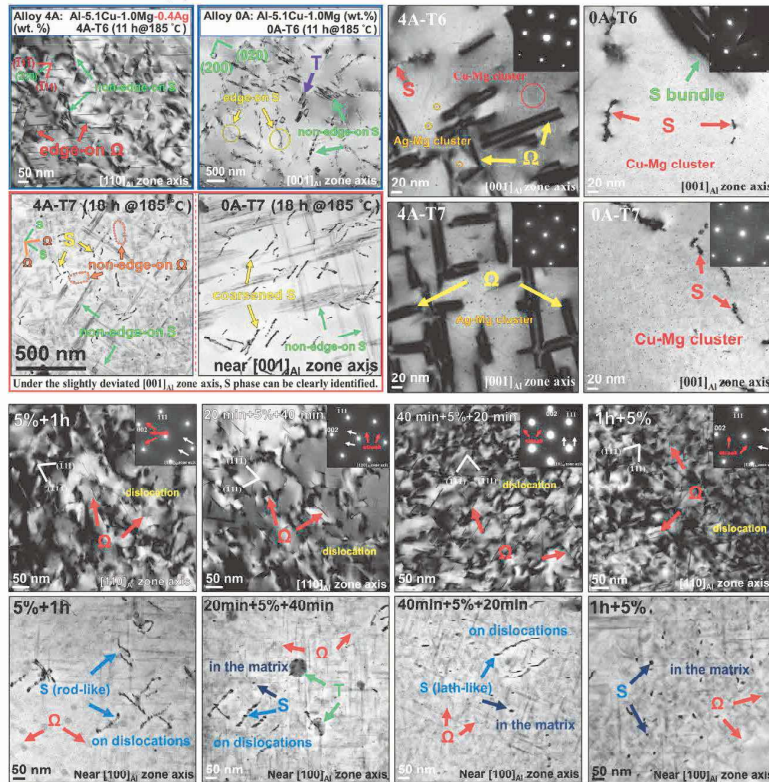
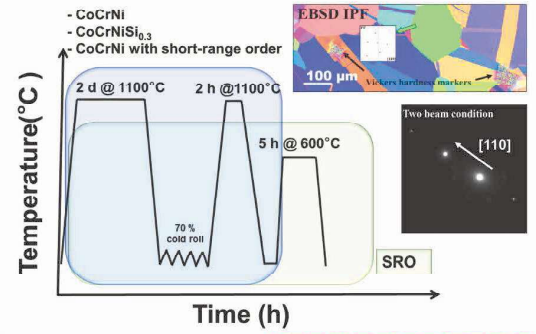
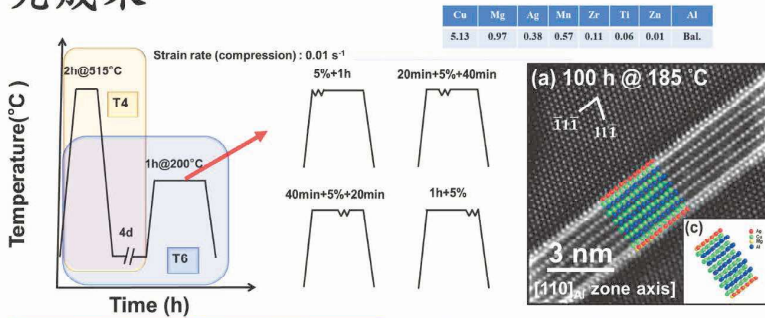
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研究重點

In recent years, research has focused on developing high-strength with light-weight materials to reduce the carbon emissions. For this propose, the current study controls the microstructures of alloys through elemental addition and heat treatment. By adding trace amounts of Ag to a 2xxx Al-Cu-Mg aluminum alloy, Ω phase can be formed to enhance strength. Additionally, warm forming at different ageing stages joint contribution of two different precipitates, further increasing the strength. On the other hand, adding Si to a CoCrNi medium entropy alloy can reduce not only density but also stacking fault energy, the latter leading to easier formation of deformation twins, which significantly improve mechanical properties. In addition, short-range order (SRO) can be formed by a proper heat treatment, resulting in more uniform deformation and increased strength.

研究成果



研生活與心得

我很榮幸能夠獲得中技社研究獎學金，這不僅是對我過去努力的肯定，更是對我未來研究的一大鼓勵。首先要感謝我的指導教授楊哲人教授，無論是在學術上的啟發，還是在研究過程中的耐心指導，都讓我受益匪淺。我也要感謝我的家人們一直在背後默默支持我。最後感謝實驗室夥伴們，除了研究上相互砥礪外，生活中也帶給我許多歡笑。