

Using Synchrotron-based X-ray Nanodiffraction to Investigate The Phase Transition of High Entropy Super Alloys Under High Pressure Condition

Kuan-Hsun Lee (李冠勳)¹

¹Program of Science and Technology of Synchrotron Light Source, National Tsing Hua University, Hsinchu, Taiwan

²National Synchrotron Radiation Research Center, Hsinchu, Taiwan

kuetuksk@gmail.com

Abstract

First of all, in this series, we have three different samples with different composition. All of them have Cr, Fe, Co, Ni in the material, but one with Ti, another with Al, the other with both Ti and Al inside. What we're going to do is using X-ray nanodiffraction (XND) to find out that the phase transition under high pressure. We believe that HEAs will change from Face-centered cubic (FCC) to Hexagonal close packing (HCP) under high pressure, and by using TPS 21A XND, we can see the Laue diffraction pattern, which can show us that the phase difference. Now the current progress is only up to first measurement of three different samples, since that TPS will shut down until November, I hope I can finish the measurement of the samples after high pressure in time..

HEAS · High pressure · XND

References

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