

## Poster Presentation

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### *Synthesis of Pd-based Tsai-type 1/1 approximants*

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Recently, a new Tsai-type 1/1 approximant (AP) was discovered in the Pd-Ge-Yb system by Kashimoto et al[1]. In this alloy, the Yb valence was found to be in an intermediate state between Yb<sup>2+</sup> and Yb<sup>3+</sup>. On the other hand, various magnetic transitions were found in other rare-earth (RE) bearing Tsai-type APs. In this work, the formation condition and magnetic property of Pd-M-RE approximants were investigated. Mother ingots of various conditions based on Pd-M-Yb[1], were prepared by arc melting followed by various heat treatment conditions to obtain homogeneous equilibrium phases. The phase constitutions were studied by powder X-ray diffraction (XRD). The obtained XRD patterns can be indexed as 1/1 AP. The details of the formation conditions as well as magnetic properties will be presented in the poster.

**[1]** *S. Kashimoto and N. Koyama., Japan Physical Society, (2013)*

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