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A System for Evaluating the Interior of a Crucible

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High performance alloys for Aerospace applications are cast in cylindrical copper crucibles. Maintaining the appropriate crucible taper and diameter is critical to a quality casting. The use of micrometers, feeler rods, visual inspection is popular for a quick assessment of crucible diameter and condition. In this work, a sensor is used to measure the crucible diameter, and video camera to record. Both units are mounted on a linear drive, that can traverse longitudinally and rotate around the axis. Preliminary results from a laboratory scale setup will be presented, along with thoughts on scale up.

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