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Automatic calibration of the laser-scanner system using an external camera

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Abstract. In Selective Laser Melting (SLM) technology a high-energy laser deposits metal powder layer-by-layer onto a building platform. High geometric accuracy in SLP is critical to producing high-quality parts. Modern calibration methods require significant manual labor, major equipment modification, or the use of expensive auxiliary equipment. This paper presents a new technique for calibrating galvanometer mirrors for SLP technology using an external camera. The proposed approach allows to simplify, cheapen and automate the calibration process.

Keywords: additive technologies, selective laser melting, computer vision

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