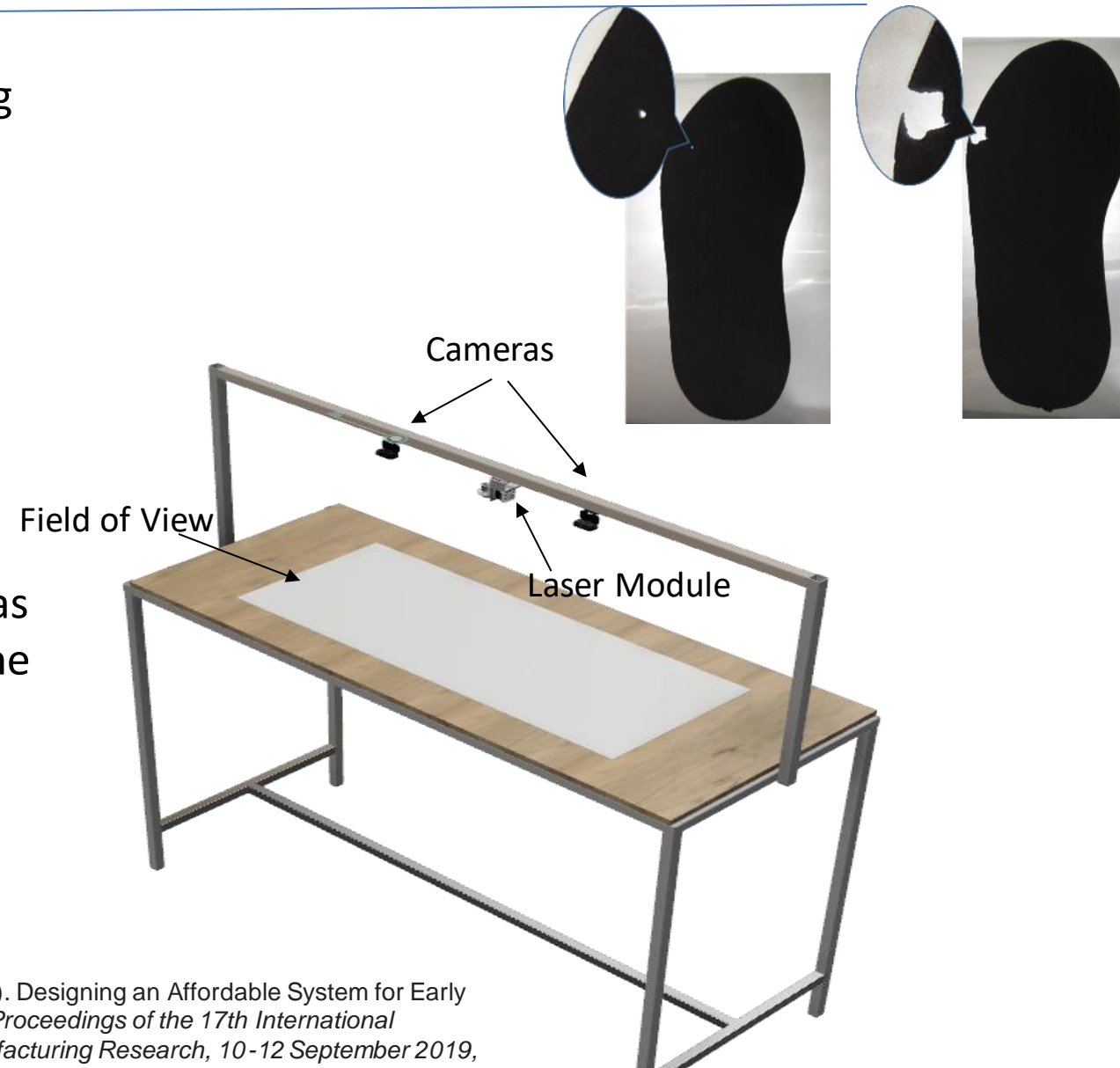# Smart Incoming Inspection System

Project deliverable to a Medical Device Manufacturing MSME (Orthotic Footwear manufacturer)

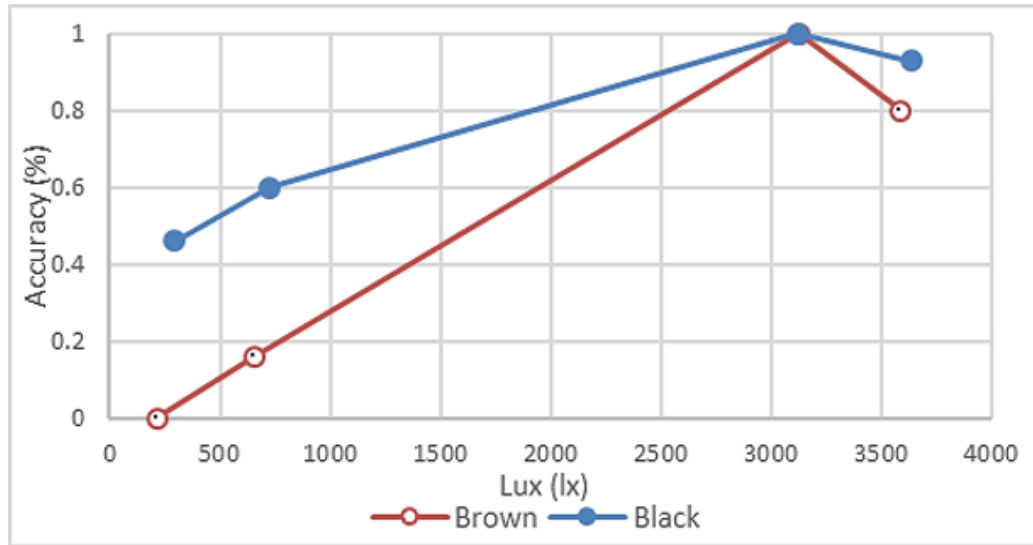Defects were identified during the production- post cutting of soles.

Affordable solution for Inspection and quality check at the incoming stage of raw materials

A machine vision algorithm and off the shelf cameras with a robotic laser pointer to assist highlighting the defect

Reduces wastage, time, human effort and cost of production

Cameras

Field of View

Laser Module

KSa, P., SAHAY, A., Ha, S. G., BISWAS, P., ARORA, M., & CHAKRABARTI, A. (2019, August). Designing an Affordable System for Early Defect Detection Using Image Processing. In *Advances in Manufacturing Technology XXXIII: Proceedings of the 17th International Conference on Manufacturing Research, incorporating the 34th National Conference on Manufacturing Research, 10-12 September 2019, Queen's University, Belfast* (Vol. 9, p. 121). IOS Press.

Smart Incoming Inspection System

Optimized light setting for accurate identification of defects (min: 1mm)

Defects are displayed as blobs and numbered for easy identification

Established statistical significance on average rejections post introduction of the system

RR_o: Without Smart Inspection
RR_i: With smart Inspection