

**ABSTRACT:**

This research investigates the use of charge coupled device (abbreviated as CCD) linear image sensors in an optical tomographic instrumentation system used for sizing particles. Four CCD linear image sensors are configured around an octagonal shaped flow pipe for a four projections system. The measurement system is explained and uses four CCD linear image sensors consisting of 2048 pixels with a pixel size of 14  $\mu\text{m}$  by 14  $\mu\text{m}$ . Hence, a high-resolution system is produced. The designed instrumentation system is calibrated using known test pieces. Spherical shaped and irregular shaped particles are tested on the designed system to complete analysis of the overall performance of the system.