

Thesis Title	Utilization of Microchannel Plate (MCP) for Low Intensity X-Ray Imaging Scope
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Abstract

The low intensity x – ray imaging scope has been constructed in this research work. The main device of x – ray imaging scope is the Image Intensifier (I.I.) consisting of Microchannel plate (MCP) with CsI coated input surface for high efficiency of x – ray detection, and of phosphor screen located about 1 mm behind the MCP output surface mounted inside a aluminum housing of the imaging scope. The small x – ray generator with a maximum x – ray power of about 7.13 mW was also constructed and used to investigate the performance of the imaging scope.

Using the x – ray intensity of 1.5 Sv/h, an image resolution of more than 4.5 lp/mm from the resolution test pattern was achieved for this x – ray imaging scope. This performance was found to be good enough for sharp imaging the finger bone, and also the connecting leads of an integrated circuit.

Keywords : X – rays / Image Intensifier (I.I.) / photocathode / Microchannel plate (MCP) / phosphor screen / resolution test pattern