

# **Design and fabrication of planar 6 cm x 6 cm microchannel plate photodetector for imaging and fast timing applications**

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Microchannel plate (MCP)-based photodetectors have shown significant potential for applications in fields such as imaging, time-of-flight system, high energy collider physics and astrophysics. With thin planar geometry and glass-body assembly, the MCP photodetectors are considered as next generation photodetectors to replace conventional photomultiplier tubes.

This talk will discuss a new photodetector production facility built at Argonne National Laboratory. Small form-factor, MCP-based photodetectors completely made out of glass were designed and currently under production. Both metal and alkali antimonides photocathodes were proposed to be incorporated in the photodetector. The photodetector design, production sequence and first performance results with metal photocathode will be presented. Possible applications will also be explored.