

ABSTRACT

Energy has a very important role for human survival and alternative energy is now being developed by experts to meet human needs in the future. One alternative energy that is abundant in nature is solar energy. Research conducted to utilize solar energy is by using solar cells or photovoltaic cells. Dye-sensitized solar cell (DSSC) is a type of solar cell made of semiconductor material coated with dye to increase the efficiency value. Titanium dioxide (TiO₂) is a semiconductor material that is often used but only has a low absorption efficiency that is only 5%. Addition of the compact layer is one step to increase TiO₂ absorption efficiency. In addition, the DSSC designed using Z907 dye and screen printing methods to facilitate fabrication. In this research we found that the efficiency value increase up to 0.45% compared to solar cells that do not use TiO₂ compact layer.

Keywords : DSSC, compact layer, pastes, titanium dioxide, screen printing.