

## Development of ethylene-vinyl acetate copolymer as an encapsulant material for thin crystalline silicon solar cells

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The development of manufacturing equipment and base material for the parts of the photovoltaic modules with very thin solar cells is in progress, due to research that is under way on the minimizing of silicon wafer thickness in order to cut down the manufacturing costs of the solar cells. Generally, an encapsulant is necessary to laminate the photovoltaic modules; therefore it is very important to develop enough encapsulant material to protect the very thin crystalline silicon solar cells. In this study, we produced ethylene-vinyl acetate copolymer with specific composition and morphology in the high-pressure autoclave reactor on a mass production scale. After a sheet was extruded with developed EVA product, we put it in the photovoltaic modules containing thin crystalline silicon solar cells, and evaluated its performance on adhesion property, light transmission, cross-linking efficiency and long-term damp heat stability. [This work was supported by the 'New & Renewable Energy' of the Korea Institute of Energy Technology Evaluation and Planning(KETEP) grant funded by the Korea government Ministry of Knowledge Economy (No. 2008NPV12P0150702010).]