

Pengembangan counter electrode berbasis carbon nanotube dengan metode spray-coating untuk aplikasi sel surya dye-sensitized

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Abstrak

Counter electrode berbasis carbon nanotube (CNT) dengan metode spray-coating untuk aplikasi sel surya dye-sensitized telah dikembangkan. Larutan CNT di-spray di atas substrat TCO dengan menggunakan spray gun. Counter electrode dibuat 4 variasi spraying: 10x, 15x, 25x, dan 55x. Karakteristik I-V dan efisiensi sel dipengaruhi oleh ketebalan lapisan, luas area sentuh counter electrode dengan elektrolit, transmitans, dan sheet resistance counter electrode. Karakteristik I-V dan efisiensi sel terbesar didapat pada counter electrode dengan spraying CNT sebanyak 55x. Efisiensi sel terbaik hasil penelitian sebesar 1,90 %.

.....Counter electrode based on carbon nanotube (CNT) by using spray-coating method for dye-sensitized solar cells have been successfully developed. CNT solution was sprayed on TCO substrate by using a spray gun. Counter electrode was made 4 variations of spraying: 10, 15, 25, and 55 times. The I-V characteristics and cell efficiency are influenced by thickness, touch area counter electrode with the electrolyte, transmittance, and sheet resistance of the counter electrode. The best I-V characteristics and efficiency of cells were obtained on 55 times of spraying of CNT counter electrode. The best efficiency of cells is about 1.90 %.