

ABSTRAK

Kurnia Rumdayasari : Pengembangan Lembar Kerja Berbasis Inkuiri Terbimbing pada Praktikum Pembuatan Sel Surya Berpemeka (*DSSC*) Kedelai Hitam

Penelitian ini bertujuan untuk mendeskripsikan tampilan lembar kerja, menganalisis hasil uji validasi dan hasil uji kelayakan lembar kerja, serta menganalisis hasil optimasi *DSSC* menggunakan zat pemeka kedelai hitam. Metode penelitiannya yaitu *Research and Development* (R&D) yang terbagi dalam dua tahapan, yakni tahap *research* atau penyelidikan dan tahap *development* atau pengembangan. Tampilan lembar kerja berbasis inkuiri terbimbing pada praktikum pembuatan sel surya berpemeka (*DSSC*) kedelai hitam terdiri atas *cover* dengan kegiatan inti berupa penyajian masalah, membuat hipotesis, merancang praktikum, melakukan praktikum, menganalisis data, serta membuat kesimpulan. Lembar kerja yang telah disusun dilakukan validasi kepada tiga orang dosen ahli dan hasil yang diperoleh yaitu nilai rata-rata r_{hitung} sebesar 0,72 yang berarti valid. Lembar kerja yang telah diperbaiki dengan saran dosen ahli digunakan untuk uji coba terbatas kepada 12 peserta didik yang telah belajar materi konservasi energi, dengan hasil sebesar 83% yang artinya lembar kerja berbasis inkuiri terbimbing pada praktikum pembuatan sel surya berpemeka (*DSSC*) ini layak digunakan. Adapun hasil optimasi *DSSC* menggunakan zat pemeka kedelai hitam didapat nilai tegangan 114,5 mV.

Kata kunci : Lembar kerja berbasis inkuiri terbimbing, Sel surya, *DSSC*, Kedelai hitam

ABSTRACT

Kurnia Rumdayasari : *Development of Guided Inquiry-Based Worksheets in the Practice of Making Black Soybean Sensitized Solar Cells (DSSC)*

This research aims to describe the appearance of the worksheet, analyze the results of the validation test and feasibility test results of the worksheet, and analyze the results of DSSC optimization using black soybean sensitizer. The research method is Research and Development (R&D) which is divided into two stages, namely the research or investigation stage and the development or development stage. The appearance of the guided inquiry-based worksheet in the practicum for making black soybean sensitive solar cells (DSSC) consists of a cover with core activities in the form of presenting problems, making hypotheses, designing practicums, doing practicums, analyzing data, and making conclusions. The worksheet that had been prepared was validated by three expert lecturers and the results obtained were an average r value of 0.72, which means it was valid. The worksheet that had been improved with the advice of expert lecturers was used for limited trials with 12 students who had studied energy conservation material, with results of 83%, which means that this guided inquiry-based worksheet in the practical for making sensitive solar cells (DSSC) was suitable for use. The results of DSSC optimization using black soybean sensitizer obtained a voltage value of 114.5 mV.

Keywords : *Guided inquiry-based worksheets, solar cells, DSSC, black soybeans*