

**ABSTRAK**  
**PENGEMBANGAN E-LKPD BERBASIS ETNOKIMIA**  
**PADA TOPIK REAKSI REDOKS, SEL VOLTA, DAN KOROSI**  
**MENGGUNAKAN APLIKASI LIVEWORKSHEETS**

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LKPD merupakan bahan ajar yang berisikan tugas yang harus dikerjakan peserta didik sesuai dengan kondisi pembelajaran. Pengembangan LKPD disesuaikan KD dan IPK agar mencapai tujuan pembelajaran yang diinginkan. Pembelajaran etnokimia merujuk pada praktik budaya yang ada dalam masyarakat, yang memiliki kaitan dengan ilmu kimia yang dapat ditemukan dalam berbagai budaya. Rata-rata nilai ulangan harian pada materi reaksi redoks dan elektrokimia diperoleh sebesar 74. Permasalahan yang dihadapi peserta didik dalam mempelajari materi redoks dan elektrokimia yaitu peserta didik kurang memahami materi reaksi redoks dan elektrokimia pada aspek mikroskopis. Penelitian ini bertujuan untuk: (1) mengetahui proses pengembangan produk LKPD berbasis etnokimia pada topik reaksi redoks, sel Volta, dan korosi menggunakan aplikasi Liveworksheets yang tahapan pengembangannya menggunakan model pengembangan 4D yang dimodifikasi 3D; (2) menghasilkan LKPD berbasis etnokimia pada topik reaksi redoks, sel Volta, dan korosi yang memenuhi kriteria validitas, efektifitas, dan kepraktisan. Instrumen penelitian yang digunakan yaitu lembar validasi, butir soal, dan lembar angket. Sampel pada penelitian ini yaitu 6 peserta didik kelas XII IPA. Data yang telah diperoleh dianalisis menggunakan analisis Gregory dan deskriptif. Hasil penelitian menunjukkan: (1) Produk telah dikembangkan dengan model pengembangan 3D dengan tahapan *define*, *design*, dan *develop*; (2) LKPD memenuhi kriteria valid dengan rata-rata persentase 88%, cukup efektif dengan rata-rata persentase 68%, dan cukup praktis rata-rata persentase 78%. Produk yang dikembangkan dapat digunakan dalam pembelajaran pada topik reaksi redoks, sel volta, dan korosi menggunakan aplikasi Liveworksheets.

**Kata Kunci:** LKPD, etnokimia, reaksi redoks, sel volta, korosi

**ABSTRACT****DEVELOPMENT OF ETHNOCHEMISTRY-BASED E-LKPD ON THE TOPICS OF REDOX REACTIONS, VOLTAIC CELLS, AND CORROSION USING LIVEWORKSHEETS APPLICATION**

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*LKPD is a teaching material that contains tasks that must be done by students in accordance with learning conditions. LKPD development is adjusted to KD and IPK in order to achieve the desired learning objectives. Ethnochemical learning refers to cultural practices that exist in society, which have links to chemistry that can be found in various cultures. The average daily test score on the material of redox reactions and electrochemistry was obtained at 74. The problem faced by students in learning redox and electrochemical materials is that students do not understand the material of redox and electrochemical reactions in the microscopic aspect. This research aims to: (1) know the process of developing ethnochemical-based LKPD products on the topics of redox reactions, Volta cells, and corrosion using the Liveworksheets application whose development stages use the 4D development model modified by 3D (Thiagarajan et al., 1974); (2) produce ethnochemical-based LKPD on the topics of redox reactions, Volta cells, and corrosion that meet the criteria of valid, effective, and practical. The research instruments used were validation sheets, question items, and questionnaire sheets. The sample in this study was 6 students of class XII IPA. The data that has been obtained is analyzed using Gregory and descriptive analysis. The results showed: (1) LKPD has been developed with the 3D development model with the stages of define, design, and develop; (2) LKPD meets the valid criteria with an average percentage of 88%, quite effective with an average percentage of 68%, and quite practical with an average percentage of 78%. The developed products can be used in learning on the topics of redox reactions, voltaic cells, and corrosion using the Liveworksheets application.*

**Keywords:** LKPD, ethnochemistry, redox reaction, voltaic cell, corrosion