

DAFTAR ISI

| | |
|--|------|
| HALAMAN PENGESAHAN..... | ii |
| KATA PENGANTAR..... | iii |
| DAFTAR ISI | iv |
| DAFTAR TABEL..... | vi |
| DAFTAR GAMBAR | vii |
| DAFTAR LAMPIRAN | viii |
| ABSTRAK | ix |
| <i>ABSTRACT</i> | x |
| BAB I PENDAHULUAN..... | 1 |
| I.1 Latar Belakang | 1 |
| I.2 Tujuan Penelitian..... | 4 |
| BAB II TINJAUAN PUSTAKA | 5 |
| II.1 Baterai Ion Litium (Li-Ion) | 5 |
| II.2 Grafena Oksida (GO) | 7 |
| II.3 Nikel Oksida (NiO) | 9 |
| II.4 Komposit GO/NiO | 11 |
| II.5 Hidrotermal | 12 |
| II.6 Karakterisasi | 13 |
| II.6.1 Inductance, Capacitance, dan Resistance (LCR) | 13 |
| II.6.2 Cyclic Voltammetry (CV) | 13 |
| II.6.3 Cyclic Charge-Discharge (CDC) | 16 |
| II.6.4 Fourier Transform Infrared Spectroscopy (FTIR) | 17 |
| II.6.5 X-Ray Diffraction (XRD) | 19 |
| BAB III METODE PENELITIAN..... | 22 |
| III.1 Variabel Penelitian..... | 22 |
| III.1.1 Variabel Tetap..... | 22 |
| III.1.2 Variabel Berubah..... | 22 |
| III.1.3 Variabel Terukur..... | 22 |
| III.2 Bahan dan Alat | 23 |
| III.2.1 Bahan..... | 23 |

| | | |
|----------|--|----|
| III.2.2 | Alat..... | 23 |
| III.3 | Prosedur Penelitian..... | 24 |
| III.3.1 | Sintesis Grafena Oksida (GO)..... | 24 |
| III.3.2 | Sintesis Nikel Oksida (NiO)..... | 25 |
| III.3.3 | Sintesis Komposit GO/NiO..... | 25 |
| III.3.4 | Uji Performa Baterai | 26 |
| III.3.5 | Karakterisasi..... | 26 |
| BAB IV | HASIL DAN PEMBAHASAN | 27 |
| IV.1 | Sintesis Grafena Oksida (GO)..... | 27 |
| IV.2 | Sintesis Nikel Oksida (NiO)..... | 29 |
| IV.3 | Sintesis Komposit GO/NiO | 30 |
| IV.4 | Performa Baterai..... | 31 |
| IV.4.1 | Uji Konduktivitas | 31 |
| IV.4.2 | Uji <i>Cyclic Voltammetry</i> (CV)..... | 32 |
| IV.4.3 | Uji <i>Charge-Discharge</i> (CDC)..... | 36 |
| IV.5 | Karakterisasi Sampel..... | 39 |
| IV.5.1 | <i>Fourier Transform Infra-Red</i> (FTIR)..... | 39 |
| IV.5.2 | <i>X-ray Diffraction</i> (XRD)..... | 42 |
| BAB V | PENUTUP..... | 45 |
| DAFTAR | PUSTAKA | 47 |
| Lampiran | | 52 |