

DAFTAR ISI

| | |
|---|-----|
| COVER..... | i |
| PENGESAHAN PEMBIMBING | ii |
| PENGESAHAN DOSEN PENGUJI | iii |
| PERNYATAAN BEBAS PLAGIASI | iv |
| KATA PENGANTAR | v |
| UCAPAN TERIMAKASIH | vi |
| DAFTAR ISI..... | vii |
| DAFTAR GAMBAR..... | x |
| DAFTAR TABEL..... | xii |
| DAFTAR LAMPIRAN..... | xiv |
| INTISARI | xv |
| <i>ABSTRACT</i> | xvi |
| BAB I PENDAHULUAN..... | 1 |
| 1.1 Latar Belakang | 1 |
| 1.2 Rumusan Masalah | 7 |
| 1.3 Asumsi dan Batasan | 8 |
| 1.4 Tujuan Penelitian | 8 |
| 1.5 Manfaat Penelitian | 9 |
| BAB II TINJAUAN PUSTAKA | 10 |
| BAB III LANDASAN TEORI | 17 |
| 3.1 <i>Stereolithography</i> | 19 |
| 3.2 <i>Design of Experiment (DoE)</i> | 22 |
| 3.2.1 Metode <i>Full Factorial</i> | 24 |
| 3.2.2 Metode <i>Taguchi</i> | 25 |
| 3.2.3 <i>Response Surface Methodology (RSM)</i> | 26 |
| 3.3 Karakterisasi dan Pengujian | 28 |
| 3.3.1 Pengujian <i>Flexural Strength</i> | 28 |
| 3.3.2 Pengujian <i>Surface Roughness</i> | 29 |
| 3.3.3 Pengujian <i>Hardness</i> | 31 |



| | | |
|----------------------------------|---|----|
| 3.4 | Uji Signifikansi | 33 |
| 3.5 | Fabrikasi <i>Temporary Crown</i> | 34 |
| BAB IV METODE PENELITIAN | | 37 |
| 4.1 | Objek Penelitian | 37 |
| 4.2 | Alat Penelitian | 37 |
| 4.3 | Bahan Penelitian..... | 40 |
| 4.4 | Diagram Alir Penelitian | 40 |
| 4.5 | Tahapan Penelitian | 41 |
| 4.5.1 | Studi Literatur..... | 42 |
| 4.5.2 | Persiapan Alat dan Bahan..... | 42 |
| 4.5.3 | Pembuatan Model Spesimen | 42 |
| 4.5.4 | <i>Pilot Study</i> | 43 |
| 4.5.5 | Perancangan DoE | 44 |
| 4.5.6 | Proses <i>Printing</i> | 46 |
| 4.5.7 | Pengukuran Dimensi | 47 |
| 4.5.8 | Proses Pengujian..... | 47 |
| 4.5.9 | Uji Signifikansi..... | 50 |
| 4.5.10 | <i>Generate Optimize</i> Parameter | 51 |
| 4.5.11 | Validasi Hasil..... | 52 |
| 4.5.12 | <i>Printing Dental Temporary Crown</i> | 52 |
| 4.5.13 | Analisis Hasil..... | 54 |
| 4.5.14 | Kesimpulan | 54 |
| BAB V HASIL DAN PEMBAHASAN | | 56 |
| 5.1 | Analisis Akurasi Dimensi | 56 |
| 5.2 | Analisis Pengujian <i>Flexural Strength</i> | 58 |
| 5.2.1 | Spesimen tanpa <i>treatment</i> | 58 |
| 5.2.2 | Spesimen dengan <i>treatment</i> | 64 |
| 5.3 | Analisis Pengujian <i>Surface Roughness</i> | 65 |
| 5.3.1 | Spesimen tanpa <i>treatment</i> | 66 |
| 5.3.2 | Spesimen dengan <i>treatment</i> | 70 |
| 5.4 | Analisis Pengujian <i>Hardness</i> | 72 |



| | | |
|----------------------|---|-----|
| 5.4.1 | Spesimen tanpa <i>treatment</i> | 72 |
| 5.4.2 | Spesimen dengan <i>treatment</i> | 76 |
| 5.4.3 | Optimasi Parameter | 79 |
| 5.5 | Validasi Hasil Parameter..... | 81 |
| 5.5.1 | Spesimen Tanpa <i>Treatment</i> | 84 |
| 5.5.2 | Spesimen dengan <i>Treatment</i> | 86 |
| 5.6 | Analisis Hasil Parameter Signifikan | 88 |
| 5.7 | Perbandingan Hasil Validasi dan Data Eksperimen..... | 92 |
| 5.7.1 | Akurasi Dimensi | 92 |
| 5.7.2 | Pengujian <i>Flexural Strength</i> | 93 |
| 5.7.3 | Pengujian <i>Surface Roughness</i> | 94 |
| 5.7.4 | Pengujian <i>Hardness</i> | 95 |
| 5.8 | Perbandingan <i>Temporary Crown</i> SLA dengan Metode Fabrikasi Lain..... | 96 |
| BAB VI PENUTUP | | 100 |
| 6.1 | Kesimpulan | 100 |
| 6.2 | Saran..... | 101 |
| DAFTAR PUSTAKA | | 102 |
| LAMPIRAN..... | | 115 |