BAB V
KESIMPULAN DAN SARAN

Pada bab ini akan dijelaskan mengenai kesimpulan dan saran. Berdasarkan dari hasil analisis terhadap pengolahan data, informasi-informasi penting dirangkum kembali sehingga diperoleh kesimpulan. Selain itu juga terdapat pula saran yang dapat menjadi masukan untuk penelitian serupa kedepannya.

V.1 Kesimpulan

Setelah dilakukan penelitian pendahuluan, pengolahan data, dan analisis data, serta rekomendasi maka diperoleh kesimpulan. Kesimpulan akan menjawab tujuan dari penelitian ini. Berikut adalah kesimpulan tersebut.

1. Berdasarkan dari analisis ANOVA diketahui parameter-parameter yang berpengaruh secara signifikan terhadap sifat mekanik dari material rPLA. Kekuatan tarik secara signifikan dipengaruhi oleh material, *layer height*, dan *printing speed*. Sementara itu, respon kekuatan luluh, modulus elastisitas, dan *shore* D *hardness* secara signifikan dipengaruhi oleh faktor jenis material dan *layer height*.
2. Berdasarkan dari analisis data respon diketahui kombinasi perlakuan parameter terbaik terhadap sifat mekanik dari material rPLA. Rekomendasi parameter untuk kekuatan tarik dan kekuatan luluh tertinggi secara rata-rata diperoleh dengan kombinasi parameter temperatur ekstrusi sebesar 190ºC, *layer height* 0,1 mm, *printing speed* 50 mm/s, *fan speed* 0%. Sementara itu, modulus elastisitas dengan kombinasi parameter temperatur ekstrusi sebesar 230ºC, *layer height* 0,1 mm, *printing speed* 50 mm/s, *fan speed* 0%. Pada *shore* D *hardness* dengan kombinasi parameter temperatur ekstrusi sebesar 230ºC, *layer height* 0,1 mm, *printing speed* 50 mm/s, *fan speed* sebesar 15%.

V.2 Saran

Berdasarkan dari hasil penelitian, terdapat saran untuk pengguna 3D *printing* dengan teknologi yang sama dan penelitian serupa kedepannya. Berikut adalah saran tersebut.

1. Penelitian selanjutnya disarankan untuk meneliti parameter proses 3D *printing* lain.
2. Penelitian dapat dikembangkan dengan mengeksplorasi material daur ulang lain.

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