CHAPTER 8

CONCLUSION

The research work concludes the following

1. LM25 aluminium alloy reinforced with Graphite and Boron Carbide were obtained as a desire raw material.

2. LM25 aluminum alloy metal matrix composites reinforced with 3, 6 and 9 wt.% of weight fractions of B$_4$C and 4 wt.% of C particles were produced by stir casting.

3. The research of fabrication of composites using stir casting showed an effective factor on the mechanical properties. The porosity and microstructure results showed that the porosity percent and grain size was lower in stir-casting process.

4. From the microstructure analysis, the particles were distributed uniformly in the optical micrographs showed good distribution of particles and very low agglomeration of reinforced material produced by stir casting method.

5. The hardness, tensile and wear rate of AMMCs casted metal were found 12% optimal using mechanical testing instruments.

6. The optimal results of wear rate of composites (AMMCs) are obtained by Taguchi L$_9$ array method.
7. By using Electrical Discharge Machining (EDM), 11% of feasible Material Removal Rate (MRR) were tested and found by Taguchi $L_8$ array method.

8. The optimal results of material rate of composites (AMMCs) are obtained by experimental solutions of produced casting metal rod were observed using Minitab 15 software.