



Fig. 13 Comparison of simulation results with experiments (a) rotor speed, (b) RMS value of stator voltage, (c) output power.

IV. CONCLUSION

Manufacture and testing of AFDPMMSG for low-speed HAWT are discussed in this paper. AFDPMMSG is designed with output power rating is 600 watts, the output voltage is 12 volt, and rotor speed rating is 330 rpm for HAWT with a wind speed rating of 9 m/sec. AFDPMMSG is designed in the form of a single stator single rotor using eighteen Neodymium N52 permanent magnets on the rotor and fifteen coils on the stator. Both HAWT and AFDPMMSG designed in this study were verified through simulations and experiments. AFDPMMSG has been able to produce an output power of 580 watts with a voltage of 14 volts and a rotational speed of 263 rpm when the wind speed is 9 m/sec. These results are close to the AFDPMMSG rating designed in this study.

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