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N Hiron, Asep Andang and Nundang Busaeri

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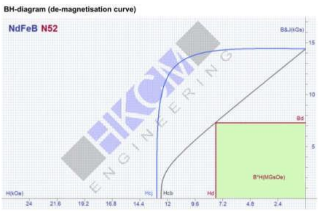

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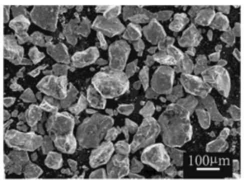

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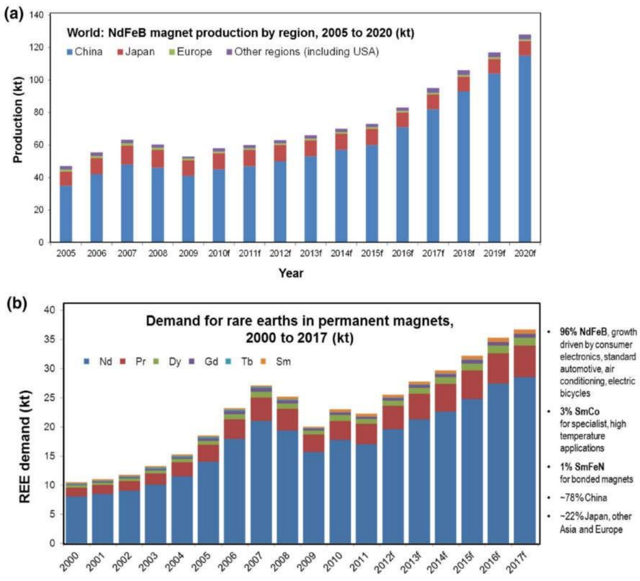

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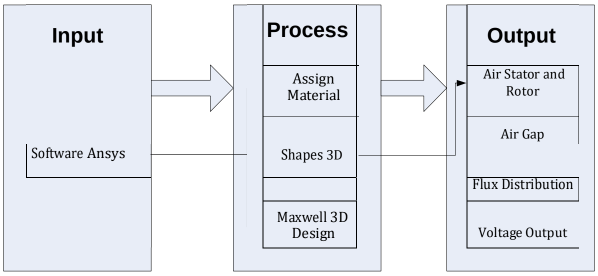

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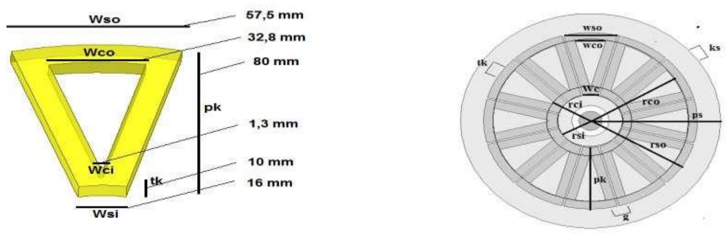

(a) (b)

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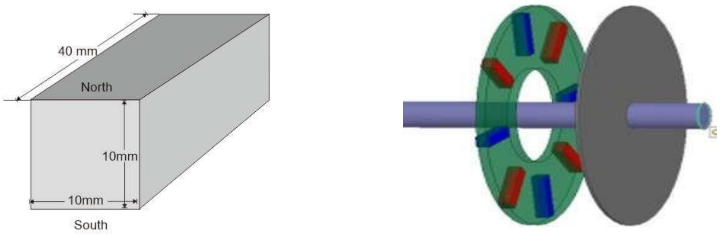

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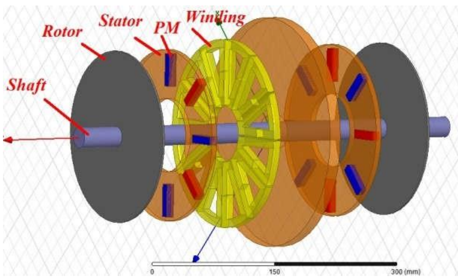

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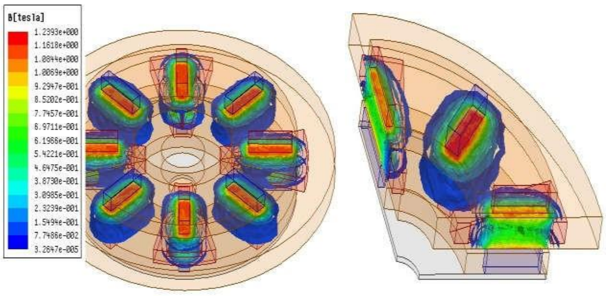

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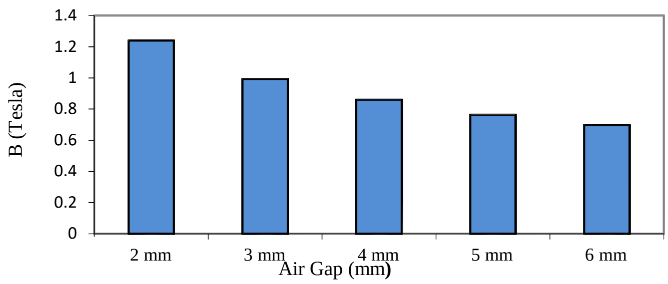

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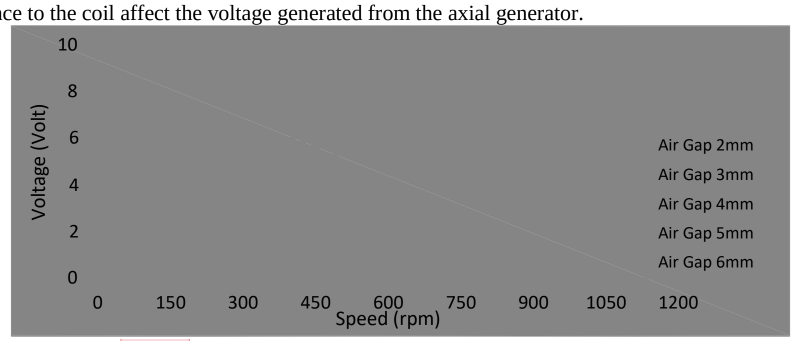

Figure 9. Relationship between output voltage and speed (rmp).

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5. Conclusion

The evidence from this study suggests that magnetic flux density of NdFeB N52 on 1 mm of diameter trapezoidal shaped coil and coil wire density of 6.36 A /mm2, has a linear relationship to the air gap, which indicates that the bigger the gap the lower the magnetic flux density in the winding coil. However, the NdFeB N52 magnet has an equitable distribution of magnetic flux density on the winding coil. The uniform distribution will provide good quality outcome, however, it should be noted that the distance of permanent magnet placement on the rotor side and also the distance between the coils on the stator side must be precise, so that the magnetic distribution in the coil will be evenly distributed. Based on experiments with 2mm to 6mm of magnet to coils of gaps, the highest output voltage is at 2mm gaps at 750rpm. This condition is in accordance with what has been done inside, that the number of magnetic poles, magnetic strength and magnetic gap distance to the coil affect the voltage generated from the axial generator.

References

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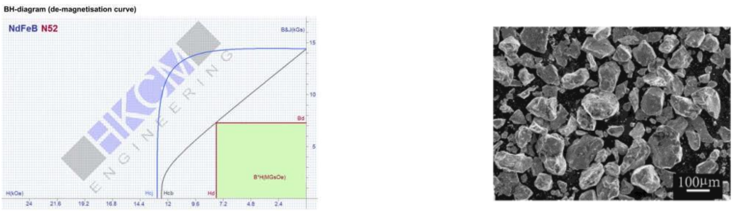

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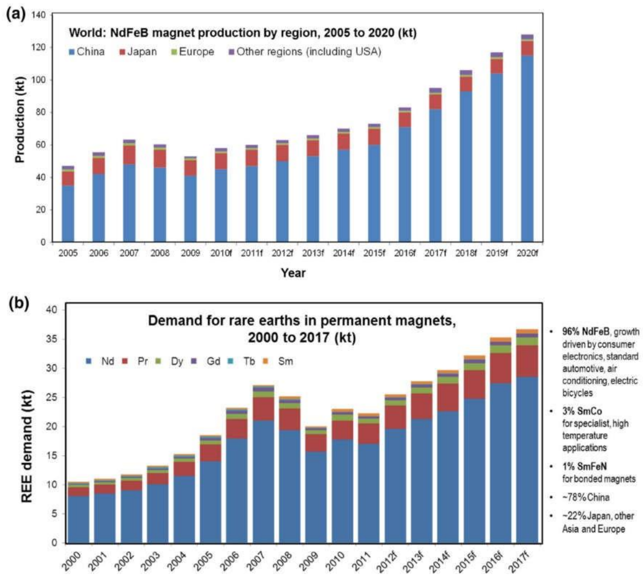

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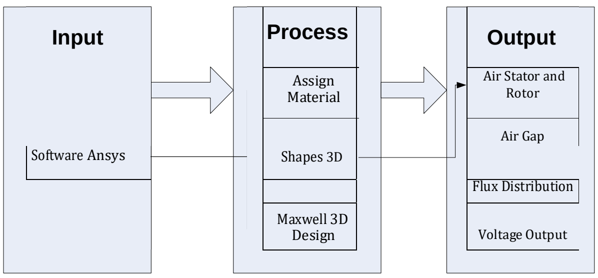

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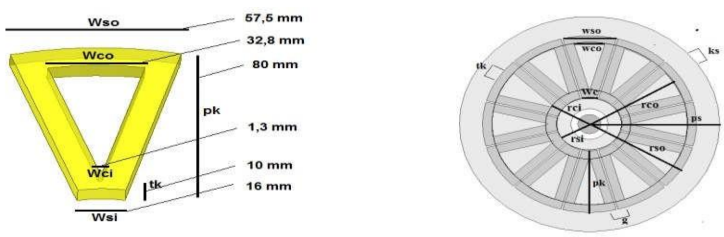

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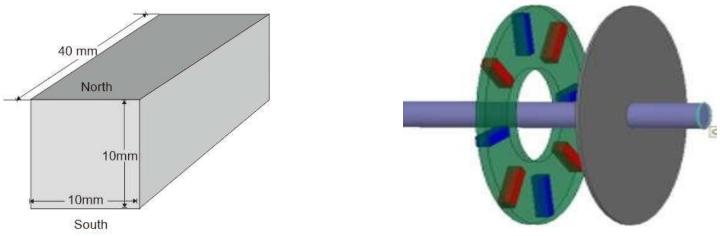

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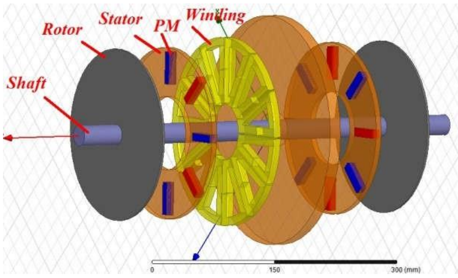

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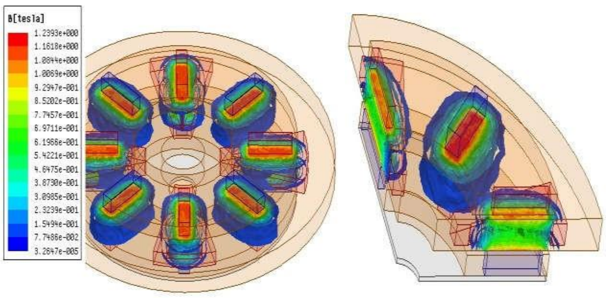

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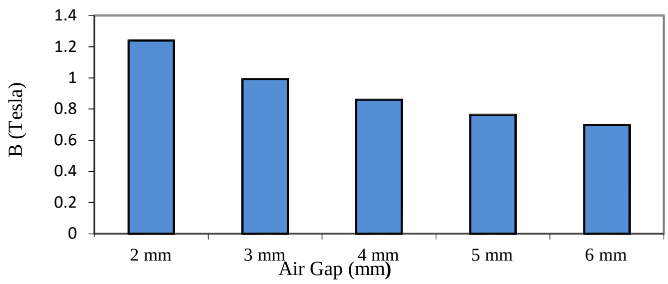

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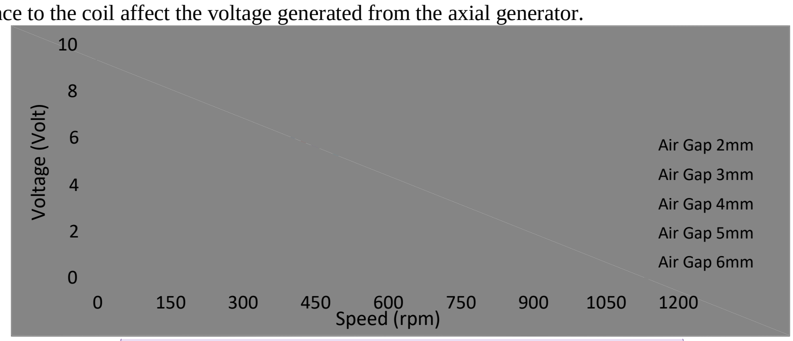

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5. Conclusion

The evidence from this study suggests that magnetic flux density of NdFeB N52 on 1 mm of diameter trapezoidal shaped coil and coil wire density of 6.36 A /mm2, has a linear relationship to the air gap, which indicates that the bigger the gap the lower the magnetic flux density in the winding coil. However, the NdFeB N52 magnet has an equitable distribution of magnetic flux density on the winding coil. The uniform distribution will provide good quality outcome, however, it should be noted that the distance of permanent magnet placement on the rotor side and also the distance between the coils on the stator side must be precise, so that the magnetic distribution in the coil will be evenly distributed. Based on experiments with 2mm to 6mm of magnet to coils of gaps, the highest output voltage is at 2mm gaps at 750rpm. This condition is in accordance with what has been done inside, that the number of magnetic poles, magnetic strength and magnetic gap distance to the coil affect the voltage generated from the axial generator.

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