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Corrigendum to "Experimental investigations of number of blades effect on archimedes spiral wind turbine performance" [MESI Vol. 4, No. 2 (2024) pp 198-209]

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In the original article (https://doi.org/10.31603/mesi.12373), there was a mistake in **Paragraph 3 (1. Introduction)**, **Paragraph 1 (2.2.1. The archimedes spiral wind turbine (ASWT) design), Table 1 (2.2.2.Mesh generation)**, **Paragraph 1, 2 and 3 (3.1. Experimental result)** and **4. Conclusion** as published. The mistake involves the use of a comma (,) instead of a period (.) and vice versa in writing numerical values, as well as missing citations. The editor and author have communicated and agreed to correct this issue to avoid misleading readers.

Corrigendum 1. Paragraph 3 (1. Introduction) [page 199]

First, the previous researchers had designed the ASWT with opening angle variations. The opening angle effect on the turbine's performance which had been conducted by Hamid et al. [21], showed that 60° can generate the best performance. A study by Kamal et al. [22] showed that the performance coefficient (C_p) of modified ASWT is 28.6% greater than the conventional ASWT.

Note:
28.6% is the corrected form of 28,6%.

Corrigendum 2. Paragraph 1 (2.2.1. The archimedes spiral wind turbine (ASWT) design) [page 201]

This study uses wind turbines with spiral blades that are configured to the Archimedes principle. The ASWT is designed by CAD Software and the geometrical parameters are shown in **Figure 4**. It was varied by the number of blades (n = 3 and n = 4) with 65° of opening angle, so two designs were investigated to obtain the aerodynamic performance of fluid flow through the blade. The dimensions of the ASWT are 300 mm in diameter and 250 mm in motor streamwise length.

Note:
(n = 3 and n = 4) is the corrected form of (n = 3,4)

Corrigendum 3. Table 1 (2.2.2.Mesh generation) [page 202]

Table 1. The elements and nodes of mesh contained in ASWT models

Blade number	Angle	Mesh Size (mm)	Nodes	Elements	Rationale for Mesh Size and Parameters
$n = 3$	$\theta = 65°$	10	128,364	675,892	Optimized for computational efficiency and sufficient detail
$n = 4$	$\theta = 65°$	10	153,370	799,341	Maintains consistency across designs for valid comparison

Note:
128,364 is the corrected form of 128.364
675,892 is the corrected form of 675.892
153,370 is the corrected form of 153.370
799,341 is the corrected form of 799.341

Corrigendum 4. Paragraph 1, 2 and 3 (3.1. Experimental result)
Corrigendum 4.1. Paragraph 1 [page 203]

Figure 8 presents a graphic of the blade number effect on (a) generator power and (b) tip speed ratio. **Figure 8a** shows the comparison between ASWT with 3 blades and 4 blades giving variations in generator power. At 1 m/s wind speed, both turbines generate power around 0-0.54 watt. The wind speed was increased which caused the power to increase. At 5 m/s, the 3 blades

turbine generates more power around 158.5% than 4 blades turbine. Until the maximum wind speed at 7 m/s, the output power of 3 blades turbine always increases. **Figure 8b** shows the tip speed ratio (TSR) comparison of both turbines. Briefly, both turbines have significantly different TSRs which are 30-95% different at all variation wind speeds. The maximum TSR is 52.761 which was generated by ASWT with 3 blades at 7 m/s wind speed.

Note:

0-0.54 watt is the corrected form of 0-0,54 watt.

158.5% watt is the corrected form of 158,5%.

Corrigendum 4.2. Paragraph 2 [page 203]

To validate and contextualize these findings, comparisons with other studies are crucial. For instance, Bhattarai et al. [24] reported a maximum power coefficient of 0.25 for ASWTs with 60° opening angles, which aligns with the trends observed in this study, where the 3 blades configuration achieved higher efficiency. Similarly, Rao et al. [32] demonstrated that spiral blades outperform traditional aerofoil designs at low wind speeds, reinforcing the aerodynamic advantages seen in this research.

Note:

Bhattarai et al. [24] is the corrected form of Bhattarai et al.

Rao et al. [32] is the corrected form of Rao et al.

[The number and order of references remain the same as in the original article].

Corrigendum 4.3. Paragraph 3 [page 204]

Wind turbine efficiency is obtained from the ratio of wind power and turbine power. The efficiency is represented in a 3D surface plot. **Figure 9** presents the 3D surface plot of turbine efficiency with (a) 3 blades and (b) 4 blades. The 3-blade turbine can give 83.49% of maximum efficiency than the 4-blade turbine which is only 31.76%.

Note:

83.49% is the corrected form of 83,49%.

31.76% watt is the corrected form of 31,76%.

Corrigendum 5. Conclusion (page 206)

Archimedes Spiral Wind Turbine (ASWT) is a unique blade design turbine that is categorized as a low-speed axial flow turbine. This turbine can convert electric power from wind energy as an environmentally friendly energy source. Many societies in urban areas have utilized this turbine because of its simple design and easy to manufacture. In this current study, experimental work was conducted to obtain the generated power by investigating the effect of blade number. To validate the aerodynamics of both ASWT designs, the simulation was performed. Some findings appeared from this study that the blade number significantly affected the generator power which the 3 blades can generate 158.5% of power than the turbine with more than 3 blades.

Note:

158.5% is the corrected form of 158,5%.

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