**Tuabin gió: thân thiện với môi trường**

Gió là một dạng của năng lượng mặt trời. Gió được sinh ra là do nguyên nhân mặt trời đốt nóng khí quyển, do trái đất xoay quanh mặt trời và do sự không đồng đều trên bề mặt trái đất. Luồng gió thay đổi tuỳ thuộc vào địa hình trái đất, luồng nước, cây cối, con người sử dụng luồng gió hoặc sự chuyển động năng lượng cho nhiều mục đích như: đi thuyền, thả diều và phát điện.

Năng lượng gió được mô tả như một quá trình, nó được sử dụng để phát ra năng lượng cơ hoặc điện. Tuabin gió sẽ chuyển đổi từ động lực của gió thành năng lượng cơ. Năng lượng cơ này có thể sử dụng cho những công việc cụ thể như là bơm nước hoặc các máy nghiền lương thực hoặc cho một máy phát có thể chuyển đổi từ năng lượng cơ thành năng lượng điện.

Để hiểu rõ hơn Cục Thông tin KH&CN quốc gia xin giới thiệu một số bài nghiên cứu đã được xuất bản chính thức và các bài viết được chấp nhận đăng trên những cơ sở dữ liệu học thuật chính thống.



**1. Sciencedirect**

1. Acoustic noise emission of air turbines for wave energy conversion: Assessment and analysis  
Renewable Energy22 May 2023Volume 212 (Cover date: August 2023)Pages 897-907  
J. C. C. HenriquesL. M. C. GatoA. A. D. Carrelhas  
<https://www.sciencedirect.com/science/article/pii/S0960148123007012/pdfft?md5=85156defbcc06c0d0f38a5e682d711c3&pid=1-s2.0-S0960148123007012-main.pdf>

2. A comparative examination of the aerodynamic performance of various seashell-shaped wind turbines  
Heliyon7 June 2023Volume 9, Issue 6 (Cover date: June 2023)Article e17036  
Hossam HamidRafea Mohamed Abd El Maksoud  
<https://www.sciencedirect.com/science/article/pii/S2405844023042445/pdfft?md5=b9d75c72443404604e26857e52e1975b&pid=1-s2.0-S2405844023042445-main.pdf>

3. A hybrid method for modelling wake flow of a wind turbine  
Ocean Engineering17 May 2023Volume 281 (Cover date: 1 August 2023)Article 114770  
Yuming YuanQ. W. MaAbbas Khayyer  
<https://www.sciencedirect.com/science/article/pii/S002980182301154X/pdfft?md5=bf21526ccb5a0e1d305562de550430c2&pid=1-s2.0-S002980182301154X-main.pdf>

4. Dual steam turbines in biogas power processes  
Chemical Engineering and Processing - Process Intensification6 May 2023Volume 190 (Cover date: August 2023)Article 109412  
William L. Luyben  
<https://www.sciencedirect.com/science/article/pii/S0255270123001496/pdfft?md5=06d4bce9bee02d03a375281b61167524&pid=1-s2.0-S0255270123001496-main.pdf>

5. Efficiency optimization of twin vertical-axis helical hydrokinetic turbines (VAHHTs) based on Taguchi method  
Applied Ocean Research9 June 2023Volume 138 (Cover date: September 2023)Article 103618  
Dan ChenYong MaTiancong Zhao  
<https://www.sciencedirect.com/science/article/pii/S0141118723001591/pdfft?md5=22d87a13046f5ca5679732e64df7afe7&pid=1-s2.0-S0141118723001591-main.pdf>

6. Biplane-rotor Wells turbine: The influence of solidity, presence of guide vanes and comparison with other configurations  
Energy17 April 2023Volume 276 (Cover date: 1 August 2023)Article 127514  
F. J. F. MoraisA. A. D. CarrelhasL. M. C. Gato  
<https://www.sciencedirect.com/science/article/pii/S0360544223009088/pdfft?md5=73feaceefc197c45eedd293ec497e9f4&pid=1-s2.0-S0360544223009088-main.pdf>

7. Performance estimation of multi-stage cooled axial flow turbines under choked conditions  
Applied Thermal Engineering27 May 2023Volume 230, Part B (Cover date: 25 July 2023)Article 120828  
Ali Akbar ShahbaziVahid EsfahanianSaadat Zirak  
<https://www.sciencedirect.com/science/article/pii/S1359431123008578/pdfft?md5=bd8871092575b576490d470412a255b6&pid=1-s2.0-S1359431123008578-main.pdf>

8. Numerical and experimental analyses of the performance of a vertical axis turbine with controllable-blades for ocean current energy  
Energy Conversion and Management8 April 2023Volume 285 (Cover date: 1 June 2023)Article 117009  
Min-Hsiung YangZhong-Ting GuRong-Hua Yeh  
<https://www.sciencedirect.com/science/article/pii/S0196890423003552/pdfft?md5=455e68b01f0ae58f9b3e6cef3f6a6c29&pid=1-s2.0-S0196890423003552-main.pdf>

9. Research of the array spacing effect on wake interaction of tidal stream turbines  
Ocean Engineering20 March 2023Volume 276 (Cover date: 15 May 2023)Article 114227  
Yuquan ZhangZhi ZhangEmmanuel Fernandez-Rodriguez  
<https://www.sciencedirect.com/science/article/pii/S002980182300611X/pdfft?md5=ec0e2cd3507b11cb063b86c13257e06b&pid=1-s2.0-S002980182300611X-main.pdf>

10. The investigation of a coaxial twin-counter-rotating turbine with variable-pitch adaptive blades  
Energy24 December 2022Volume 267 (Cover date: 15 March 2023)Article 126546  
Baigong WuMingjing ZhanXiao Zhang  
<https://www.sciencedirect.com/science/article/pii/S0360544222034338/pdfft?md5=e47820709fd8a1b76248d501cb6da346&pid=1-s2.0-S0360544222034338-main.pdf>

11. Effect of leading-edge tubercles on the hydrodynamic characteristics and wake development of tidal turbines  
Journal of Fluids and Structures4 April 2023Volume 119 (Cover date: May 2023)Article 103873  
Menghao FanZhaocheng SunYiqi Bai  
<https://www.sciencedirect.com/science/article/pii/S0889974623000415/pdfft?md5=0f19d9df54e2d3688d04d23eea4347b2&pid=1-s2.0-S0889974623000415-main.pdf>

12. Performance optimization of a modified Wells turbine for wave energy conversion  
Ocean Engineering29 May 2023Volume 280 (Cover date: 15 July 2023)Article 114849  
Ahmed T. M. KotbMohamed A. A. NawarMohamed H. Mohamed  
<https://www.sciencedirect.com/science/article/pii/S0029801823012337/pdfft?md5=678e514dea59ab92ddefd3a0c39cd6b2&pid=1-s2.0-S0029801823012337-main.pdf>

13. Towards development and optimization of the Savonius wind turbine incorporated with a wind-lens  
Energy24 March 2023Volume 274 (Cover date: 1 July 2023)Article 127263  
Ali HesamiAmir H. Nikseresht  
<https://www.sciencedirect.com/science/article/pii/S0360544223006576/pdfft?md5=2f01051eb8e4bdb94ab033391528a154&pid=1-s2.0-S0360544223006576-main.pdf>

14. Effects of detonation initial conditions on performance of pulse detonation chamber-axial turbine combined system  
Energy22 May 2023Volume 278, Part A (Cover date: 1 September 2023)Article 127765  
Junyu LiuZhiwu WangJingjing Huang  
<https://www.sciencedirect.com/science/article/pii/S0360544223011593/pdfft?md5=3b61027b1efdf34f4f33ad54b857f436&pid=1-s2.0-S0360544223011593-main.pdf>

15. Hydraulic performances of a bulb turbine with full field reservoir model based on entropy production analysis  
Renewable Energy28 April 2023Volume 211 (Cover date: July 2023)Pages 347-360  
Soo-Hwang AhnHong TianYunpeng Yu  
<https://www.sciencedirect.com/science/article/pii/S0960148123006055/pdfft?md5=60aca93a7a4d09d48e9de95141f921ad&pid=1-s2.0-S0960148123006055-main.pdf>

16. Numerical analysis of H-Darrieus vertical axis wind turbines with varying aspect ratios for exhaust energy extractions  
Energy4 May 2023Volume 277 (Cover date: 15 August 2023)Article 127739  
Enderaaj SinghSukanta RoyMing Chiat Law  
<https://www.sciencedirect.com/science/article/pii/S0360544223011337/pdfft?md5=24e9bf6cdb2a1bbf27b0a4ec612b1869&pid=1-s2.0-S0360544223011337-main.pdf>

17. Thermodynamic performance of a radial-inflow turbine for ocean thermal energy conversion using ammonia  
Renewable Energy6 December 2022Volume 202 (Cover date: January 2023)Pages 907-920  
Chengbin ZhangZhe WuYongping Chen  
<https://www.sciencedirect.com/science/article/pii/S0960148122018092/pdfft?md5=a5dc0e68d750f9f4f7feb19107653767&pid=1-s2.0-S0960148122018092-main.pdf>

18. Aerodynamic characteristics of NACA 0012 vs. NACA 4418 airfoil for wind turbine applications through CFD simulation  
Materials Today: ProceedingsAvailable online 29 May 2023In press, corrected proof  
Arunabha MahatoRavi Kant SinghSubhas Chandra Rana  
<https://www.sciencedirect.com/science/article/pii/S2214785323030754/pdfft?md5=a295c3b92d092fe529adea2df3f048b0&pid=1-s2.0-S2214785323030754-main.pdf>

19. Wind turbine power and land cover effects on cumulative bat deaths  
Science of The Total EnvironmentAvailable online 1 June 2023In press, journal pre-proofArticle 164536  
Aristides MoustakasPanagiotis GeorgiakakisEleftherios Kapsalis  
<https://www.sciencedirect.com/science/article/pii/S0048969723031571/pdfft?md5=355ca525ec6e47bd86e559e4e5eeab05&pid=1-s2.0-S0048969723031571-main.pdf>

20. Performance evaluation of the savonius hydrokinetic turbine using soft computing techniques  
Renewable EnergyAvailable online 9 June 2023In press, journal pre-proofArticle 118906  
Mohammad Sadegh KhaniYounes ShahsavaniOzgur Kisi  
<https://www.sciencedirect.com/science/article/pii/S0960148123008030/pdfft?md5=4d78c479e1ebfc400520209419a53202&pid=1-s2.0-S0960148123008030-main.pdf>

21. Robust scheduling of remanufacturing processes for the repair of turbine blades  
CIRP AnnalsAvailable online 7 June 2023In press, corrected proof  
Lei LiuMarcello Urgo  
<https://www.sciencedirect.com/science/article/pii/S000785062300032X/pdfft?md5=3bd5fa2a76cccba9b26c1c128acfce44&pid=1-s2.0-S000785062300032X-main.pdf>

22. Numerical study of aerodynamic performance of horizontal axis dual-rotor wind turbine under atmospheric boundary layers  
Ocean Engineering6 June 2023Volume 280 (Cover date: 15 July 2023)Article 114944  
Heming BaiNina WangDecheng Wan  
<https://www.sciencedirect.com/science/article/pii/S0029801823013288/pdfft?md5=330ed36d1e450916bdabbf0078485fe8&pid=1-s2.0-S0029801823013288-main.pdf>

23. Performance assessment for a novel supersonic turbine engine with variable geometry and fuel precooled: From feasibility, exergy, thermoeconomic perspectives  
Applied Thermal Engineering16 February 2023Volume 225 (Cover date: 5 May 2023)Article 120227  
Changpeng CaiQiangang ZhengHaibo Zhang  
<https://www.sciencedirect.com/science/article/pii/S1359431123002569/pdfft?md5=ccd0b13becf2cba73e277f50a7c69d6f&pid=1-s2.0-S1359431123002569-main.pdf>

24. Improving the efficiency of Darrieus turbines through a gear-like turbine layout  
Energy28 December 2022Volume 267 (Cover date: 15 March 2023)Article 126580  
Wenlong TianXiwen NiZhaoyong Mao  
<https://www.sciencedirect.com/science/article/pii/S0360544222034673/pdfft?md5=ea4837ed9700cea838312fc72ade7c48&pid=1-s2.0-S0360544222034673-main.pdf>

25. Blade element momentum theory for a skewed coaxial turbine  
Ocean Engineering3 January 2023Volume 269 (Cover date: 1 February 2023)Article 113555  
Kelsey ElferingRodney MetoyerKenneth Granlund  
<https://www.sciencedirect.com/science/article/pii/S0029801822028384/pdfft?md5=cdff37a6845f4224afc7a7d7b9f58857&pid=1-s2.0-S0029801822028384-main.pdf>

26. Study on the acoustic characteristics of a heavy-duty gas turbine combustor  
Journal of Engineering Research11 April 2023Volume 11, Issue 2 (Cover date: June 2023)Article 100068  
Xiaofeng LiJunfeng XiaoJiaxing Xia  
<https://www.sciencedirect.com/science/article/pii/S230718772300069X/pdfft?md5=c8737fe9df14a8843245225df0272c26&pid=1-s2.0-S230718772300069X-main.pdf>

27. Novel hybrid blade design and its impact on the overall and self-starting performance of a three-dimensional H-type Darrieus wind turbine  
Journal of Fluids and Structures4 April 2023Volume 119 (Cover date: May 2023)Article 103876  
Yunus CelikDerek InghamMohamed Pourkashanian  
<https://www.sciencedirect.com/science/article/pii/S0889974623000440/pdfft?md5=73a553b4f955ace1c1e182171a5b0f38&pid=1-s2.0-S0889974623000440-main.pdf>

28. Numerical investigations on roof ventilator turbine performance characteristics using ANSYS  
Materials Today: ProceedingsAvailable online 11 May 2023In press, corrected proof  
S. Lionel BenestonC. ShilajaR. Girimurugan  
<https://www.sciencedirect.com/science/article/pii/S221478532302518X/pdfft?md5=db1dfce5c406b32531f34bf53d70982d&pid=1-s2.0-S221478532302518X-main.pdf>

29. The influence of support arms on the performance of vertical axis wind turbines  
Materials Today: Proceedings23 November 2022Volume 72, Part 1 (Cover date: 2023)Pages 514-523  
Gavin Scott Manggai van StratanSukanta RoyVincent CC Lee  
<https://www.sciencedirect.com/science/article/pii/S2214785322068559/pdfft?md5=b2b47821eb91e54d71ae8737eaa599b2&pid=1-s2.0-S2214785322068559-main.pdf>

30. Re-purposing of shallow wind turbine foundations for power capacity increase  
Soil Dynamics and Earthquake Engineering14 April 2023Volume 171 (Cover date: August 2023)Article 107959  
Behrouz Badrkhani AjaeiM. Hesham El Naggar  
<https://www.sciencedirect.com/science/article/pii/S026772612300204X/pdfft?md5=b0c7eb4ddac24c6e295ced7b4d90f765&pid=1-s2.0-S026772612300204X-main.pdf>

31. Fatigue fracture failure analysis of 12Cr12Mo steam turbine blade  
Engineering Failure Analysis26 May 2023Volume 150 (Cover date: August 2023)Article 107356  
Qiqi HeSong XueWei Hu  
<https://www.sciencedirect.com/science/article/pii/S1350630723003102/pdfft?md5=9de50f77b35cb6fb7fa40a22c270acd6&pid=1-s2.0-S1350630723003102-main.pdf>

32. Thermodynamic assessment of biomass-fueled solid oxide fuel cell integrated gas turbine hybrid configuration  
Sustainable Energy Technologies and Assessments28 April 2023Volume 57 (Cover date: June 2023)Article 103242  
Abhinav Anand SinhaSanjayTushar Choudhary  
<https://www.sciencedirect.com/science/article/pii/S2213138823002357/pdfft?md5=20da7cf1eba7d62162af744d5154e53b&pid=1-s2.0-S2213138823002357-main.pdf>

33. Performance analysis of various types of ducted wind turbines – A review  
Materials Today: Proceedings25 November 2022Volume 80, Part 1 (Cover date: 2023)Pages 188-194  
N. AravindhanChidambaranathan BibinS. Arunkumar  
<https://www.sciencedirect.com/science/article/pii/S2214785322070912/pdfft?md5=57d7b05704c1fe54acb4d855275b4b4b&pid=1-s2.0-S2214785322070912-main.pdf>

34. Structural and thermal analysis on high-pressure steam turbine blade to determine the optimum material for its manufacturing  
Materials Today: ProceedingsAvailable online 26 May 2023In press, corrected proof  
K. Aruna PrabhaCh. Naveen ReddyG. Yeshwanth Kumar  
<https://www.sciencedirect.com/science/article/pii/S2214785323029401/pdfft?md5=695d3163ff8deae220e91eee64206f5e&pid=1-s2.0-S2214785323029401-main.pdf>

35. Modeling of the circumferential crack growth under torsional vibrations of steam turbine shafting  
Theoretical and Applied Fracture Mechanics30 March 2023Volume 125 (Cover date: June 2023)Article 103881  
A. BovsunovskyE. ShtefanV. Peshko  
<https://www.sciencedirect.com/science/article/pii/S0167844223001441/pdfft?md5=034a6b0fb4ea7b4a6c913bf6992c2030&pid=1-s2.0-S0167844223001441-main.pdf>

36. Development of copra dryer incorporated with convective steam turbine  
Materials Today: ProceedingsAvailable online 23 May 2023In press, corrected proof  
R. Suresh KumarN. JayanthiNaveen Agrawal  
<https://www.sciencedirect.com/science/article/pii/S221478532302953X/pdfft?md5=68a40e2a0f32fb25e107368a712e2c09&pid=1-s2.0-S221478532302953X-main.pdf>

37. Irreversible losses, characteristic sizes and efficiencies of sCO2 axial turbines dependent on power capacities  
Energy6 April 2023Volume 275 (Cover date: 15 July 2023)Article 127437  
Tianze WangJinliang XuGuanglin Liu  
<https://www.sciencedirect.com/science/article/pii/S0360544223008319/pdfft?md5=5cb0f049c194013ddbf37cf32439c717&pid=1-s2.0-S0360544223008319-main.pdf>

38. Research on dynamic characteristics of vertical axis wind turbine extended to the outside of buildings  
Energy10 March 2023Volume 272 (Cover date: 1 June 2023)Article 127182  
Gang LiYidian LiLiyan Huang  
<https://www.sciencedirect.com/science/article/pii/S0360544223005765/pdfft?md5=ebb57a0209819d7a61d8ec6b15fd74e9&pid=1-s2.0-S0360544223005765-main.pdf>

39. Estimation of exergy-based sustainability index and performance evaluation of a novel intercooled hybrid gas turbine system  
International Journal of Hydrogen Energy14 December 2022Volume 48, Issue 23 (Cover date: 15 March 2023)Pages 8629-8644  
Abhinav Anand SinhaTushar Choudhary Sanjay  
<https://www.sciencedirect.com/science/article/pii/S0360319922050972/pdfft?md5=5d616c607a5e45d28c9ebb20c97fedd3&pid=1-s2.0-S0360319922050972-main.pdf>

40. Diffuser augmented wind turbines: A critical analysis of the design practice based on the ducting of an existing open rotor  
Journal of Wind Engineering and Industrial Aerodynamics24 April 2023Volume 238 (Cover date: July 2023)Article 105428  
R. BontempoE. M. Di MarzoM. Manna  
<https://www.sciencedirect.com/science/article/pii/S0167610523001319/pdfft?md5=854bdf892c21d1b2aa3e65009023f1cc&pid=1-s2.0-S0167610523001319-main.pdf>

41. Experimental performance and wake study of a ducted twin vertical axis turbine in ebb and flood tide currents at a 1/20th scale  
Renewable EnergyAvailable online 1 June 2023In press, journal pre-proof  
Martin MoreauGrégory GermainGuillaume Maurice  
<https://www.sciencedirect.com/science/article/pii/S0960148123007589/pdfft?md5=ef9947c843d7a1eeffcf4e4b988bedcb&pid=1-s2.0-S0960148123007589-main.pdf>

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