R. Schmehl
Wind Energy

Employment

Wind Energy
Delft University of Technology
1 Oct 2009 → 8 Oct 2034

Founding member
Airborne Wind Europe
Spain
1 Jan 2019 → present

Advisory board member
Kitepower
Delft, Netherlands
1 Jan 2016 → present

Research outputs

An Aero-Structural Model for Ram-Air Kite Simulations
Thedens, P. & Schmehl, R., 2023, In: Energies. 16, 6, 18 p., 2603.

Conformable Inflatable Wings Woven Using a Jacquard Technique
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Fast Aero-Structural Model of a Leading-Edge Inflatable Kite
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Life-Cycle Assessment of a Multi-Megawatt Airborne Wind Energy System
van Hagen, L. J. A., Petrick, K., Wilhelm, S. & Schmehl, R., 2023, In: Energies. 16, 4, 23 p., 1750.

Low- and High-Fidelity Aerodynamic Simulations of Box Wing Kites for Airborne Wind Energy Applications
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Flight path planning in a turbulent wind environment
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Fechner, U., van der Vlugt, R., Schmehl, R. & Ockels, WJ., 2011, p. 167-167. 1 p.

Flight Dynamics and Stability of a Tethered Inflatable Kiteplane
Terink, EJ., Breukels, J., Schmehl, R. & Ockels, WJ., 2011, In: Journal of Aircraft: devoted to aeronautical science and technology. 48, 2, p. 503-513 11 p.

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Burger, M., Klose, G., Rottenkolber, G., Schmehl, R., Giebert, D., Schäfer, O., Koch, R. & Wittig, S., 1 Jan 2001, *Coal, Biomass and Alternative Fuels; Combustion and Fuels; Oil and Gas Applications; Cycle Innovations.* ASME, Vol. 2.

Evaluation of advanced Two-Phase flow and combustion models for predicting low emission combustors
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Discrete-dipole approximation for scattering by features on surfaces by means of a twodimensional fast Fourier transform technique
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Nebeker, B. M., Schmehl, R., Starr, G. W. & Hirleman, E. D., 1 Jan 1996, *Proceedings of SPIE - The International Society for Optical Engineering.* Jones, S. K. (ed.). Vol. 2725. p. 690-697 8 p.

Activities

9th international Airborne Wind Energy Conference (AWEC 2021) (Event)
Lorenzo Fagiano (Editor), Alessandro Croce (Editor), R. Schmehl (Editor) & Stefanie Thoms (Editor)
22 Jun 2022 → 24 Jun 2022

Energies (Journal)
R. Schmehl (Editor) & Christoph M. Hackl (Editor)
2021 → 2022

Wind Energy Science (Journal)
R. Schmehl (Editor)
2021 → …

8th international Airborne Wind Energy Conference (AWEC 2019) (Event)
R. Schmehl (Editor) & Oliver Tulloch (Editor)
15 Oct 2019 → 16 Oct 2019

8th international Airborne Wind Energy Conference (AWEC 2019)
Roland Schmehl (Organiser)
14 Oct 2019 → 16 Oct 2019

7th international Airborne Wind Energy Conference (AWEC 2017) (Event)
Moritz Diehl (Editor), Rachel Leuthold (Editor) & Roland Schmehl (Editor)
5 Oct 2017 → 6 Oct 2017

7th international Airborne Wind Energy Conference (AWEC 2017)
Roland Schmehl (Organiser)
2017

Mini-Symposium Airborne Wind Energy
Roland Schmehl (Organiser)
14 Dec 2016

Mini-Symposium Airborne Wind Energy
Roland Schmehl (Organiser)
14 Dec 2016

6th international Airborne Wind Energy Conference (AWEC 2015) (Event)
R. Schmehl (Editor)
15 Jun 2015 → 16 Jun 2015

Delft University of Technology (Publisher)
R. Schmehl (Editor)
2015 → …

Dynamic model of a bridled kite including rotational deformations
R. Schmehl (Speaker)
2015 → …

Dynamic nonlinear aeroelastic behaviour of flexible wings in an airflow
R. Schmehl (Speaker)
2015 → …

Fault-tolerant and reliable design of a pumping kite power system
R. Schmehl (Speaker)
2015 → …

Preparing the road for 24 hours flight operation of a pumping kite power system
R. Schmehl (Speaker)
2015 → …

The AWESCO initial training network - Addressing the key engineering challenges of airborne wind energy
R. Schmehl (Speaker)
2015 → …

Traction power generation with tethered wings - A quasi-steady model for the prediction of the power output
R. Schmehl (Speaker)
2015 → …

Welcome to the Airborne Wind Energy Conference 2015
R. Schmehl (Speaker)
2015 → …

Flight dynamic modelling of inflatable membrane kites including aeroslasticity effects
R. Schmehl (Speaker)
2013 → …

Springer (Publisher)
R. Schmehl (Editor)
2013 → …

Finally, kites have grown up
R. Schmehl (Speaker)
5 Oct 2012

Automated flight and recent development of kite power at TU Delft
R. Schmehl (Speaker)
2012

Modeling and Simulation of Kite Power Systems
R. Schmehl (Speaker)
2011 → …

Recent advances in kite power technology
R. Schmehl (Speaker)
2010 → …

European Academy of Wind Energy (EAWE) (External organisation)
R. Schmehl (Chair), Philip Bechtle (Member), Filippo Campagnolo (Member), Po Wen Cheng (Member), Moritz Diehl (Member), Lorenzo Fagiano (Member), Mac Gaunaa (Member), Jochem Weber (Member) & Chris Vermillion (Member)
2009 → …

Prizes

Innovation stamps
Schmehl, R. (Recipient), 2021

Rhizome: Development of an Autarkic Design-to-Robotic-Production and -Operation System for Building Off-Earth Rhizomatic Habitats
Bier, H.H. (Recipient), Schmehl, R. (Recipient), Cervone, A. (Recipient), Hidding, A.J. (Recipient), Wan, A. (Recipient), Vermeer, E. C. F. (Recipient), Verma, M. K. (Recipient), Jani, K. K. (Recipient), Avrămiea, E. C. (Recipient) & Jain, S. P. (Recipient), 2021

Press/Media

AWEC 2017
Roland Schmehl
29/10/17
1 item of Media coverage

Afsluitdijk designinnovatieproject
Wubbo Ockels, Daan Roosegaarde, Johannes Peschel, Roland Schmehl & Dominik Frey
2/01/18
1 item of Media coverage

After Highflyer Crashes, Airborne Wind Energy Regroups
R. Schmehl
3/02/21
1 Media contribution

Alphabet's Makani Tests Wind Energy Kites in the North Sea
Roland Schmehl
25/10/19 → 1/12/19
1 item of Media coverage, 1 Media contribution

Clean energy from an altitude of 500 m
Johannes Peschel & R. Schmehl
1/02/17
1 Media contribution

Cover Story : Effect of Chordwise Struts and Misaligned Flow on the Aerodynamic Performance of a Leading-Edge Inflatable Wing
A.C. Viré, G.H.M. Lebesque, M.A.M. Folkersma & R. Schmehl
21/03/22
1 item of Media coverage

Crossover-subsidie NWO: 4 promovendi voor Kitepower
Roland Schmehl, Pavol Bauer, Gautham Ram Chandra Mouli & Thiago B. Soeiro
13/12/19
1 item of Media coverage

Drones and power generation – what's the connection?
Roland Schmehl & Bernard van Hemert
7/02/18
1 item of Media coverage

Energia pulita e sostenibile grazie a un'ala gonfiabile
Roland Schmehl
22/06/20
1 Media contribution

Fliegende Kraftwerke: Strom von Drachen und Drohnen
R. Schmehl & Philip Bechtle
24/01/19

1 Media contribution

Flugdrachen und Heliumringe: Kommt Windenergie bald aus der Höhe? door Axel Flemming
R. Schmehl
1/01/15
1 Media contribution

Ganz oben: Winddrachen liefern viel zuverlassiger Energie, in der Regel auch dann, wenn am Erdboden Windstille herrscht
Roland Schmehl & Wubbo Ockels
1/04/16
1 Media contribution

High altitude wind power: slimmer, lichter en goedkoper
R. Schmehl
18/11/11
1 item of Media coverage

Innovatiepostzegels
M. Ghilardi, R. Schmehl, P. Bauer, C.J.D. van Nispen, O. Isabella, R.E. Kooij, A.R. Bidarra, J.T. Pronk, A.J. Klein Breteler, H.H. Bier, M.J.F. Stive, W.J. Kok & Karina Peña
16/08/21 → 18/08/21
16 items of Media coverage

Innovatieve vlieger wekt 2x zoveel energie op als windturbine
R. Schmehl & Johannes Peschel
19/12/18
1 Media contribution

Je hebt geen windmolen nodig voor windenergie. Door Barbara Debusschere
W.J. Ockels & R. Schmehl
30/11/15
1 item of Media coverage

Kite Power 2021
W.J. Ockels, Johannes Peschel, R. Schmehl & J.C.M. Breuer
1/02/21 → 17/02/21
1 item of Media coverage, 1 Media contribution

Kite Power at the TU Delft
Roland Schmehl
3/11/17 → 3/11/17
1 item of Media coverage, 1 Media contribution

Kite Power: The world of airborne wind energy
Wubbo Ockels, Joep Breuer, Pietro Faggiani & Roland Schmehl
1/06/17
1 Media contribution

Kitepower: Pioneering kite-designed, airborne wind energy system can reduce the cost of wind energy
R. Schmehl, Johannes Peschel & W.J. Ockels
12/09/20
1 item of Media coverage

Kitepower: the Future of Renewables
Roland Schmehl

26/05/20
1 item of Media coverage

Lass fliegen!
Joep Breuer & Roland Schmehl
3/05/19
1 item of Media coverage

Lenkdrachen als Kraftwerk
Roland Schmehl
6/02/16
1 Media contribution

Lightweight wind energy. Door Jos Wassink
R. Schmehl
1/01/15
1 Media contribution

Projects in the spotlight: REACH, AMPYXAP3, EK200-AWESOME, and NextWind
Roland Schmehl
1/01/20
1 item of Media coverage

Ready Flyer One: Airborne Wind Energy Simulations Guide the Leap to Satisfying Global Energy Demand
Roland Schmehl & Gonzalo Sánchez-Arriaga
26/02/19
1 item of Media coverage

Roland Schmehl 2020
Roland Schmehl
11/12/19 → 12/02/20
3 items of Media coverage

Roland Schmehl in de media 2021
R. Schmehl
13/04/21 → 14/10/21
12 items of Media coverage

Roland Schmehl in de media 2022
R. Schmehl & Johannes Peschel
8/02/22 → 21/11/22
15 items of Media coverage, 1 Media contribution

Roland Schmehl in de media 2023
R. Schmehl
1/02/23 → 28/02/23
3 Media contributions

Stromernte am Himmel. Die Forschung hebt ab.Wie Flugdrachen Stromerzeugen, erklart Roland Schmehl von der Universitat Delft. Door Henriette Horny
R. Schmehl
11/03/15
1 item of Media coverage

Vliegerenergie: naar betaalbare, schone energie
Roland Schmehl, Johannes Peschel & Martin Schmelzer

12/05/16 → 31/05/16
1 item of Media coverage, 1 Media contribution

Vliegerenergie: naar betaalbare, schone energie
Roland Schmehl & Johannes Peschel
1/06/16 → 1/06/16
2 items of Media coverage

Windkraft: Wie wir sie besser nutzen konnen
Roland Schmehl
15/11/17 → 15/11/17
2 Media contributions

Windräder, die abheben
R. Schmehl & Moritz Diehl
17/01/18
1 Media contribution

Projects

AWESCO: Airborne Wind Energy System Modelling, Control and Optimisation
Schmehl, R., Viré, A. C., Candade, A. A., Thedens, P., Folkersma, M. A. M. & Rapp, S.
1/01/15 → 31/12/18

EFRO: EFRO project Fieldlab Unmanned Valley Valkenburg
Schmehl, R.
1/01/16 → 1/01/23

MERIDIONAL: Multiscale modelling for wind farm design, performance assessment and loading
Schmehl, R., Watson, S. J., Allaerts, D. J. N., De Tavernier, D. A. M., von Terzi, D. A., Peschel, J., Fagiano, L., Bauer, F., Cheng, P. W. & Cayon, O.
1/10/22 → 30/09/26

NEON: New Energy Outlook for the Netherlands
Alkemade, F., Bauer, P., Qin, Z., Chandra Mouli, G. R., Yadav, S., Schmehl, R., Hoekstra, A., Chandra Mouli, G. R., Creatore, A., Renes, R. J., Steinbuch, M., Lurkin, V., Rasouli, S., Bonnema, M., van de Coevering, P., Wijnands, K., Roes, M., van Gool, P., Diercks, G., Bekkers, R., Lavrijssen, S., Hofman , T., Loorbach, D., van Lelyveld , M., Sanaz Kaschny, L., Loomans, N., Silvas, E., Van Woensel, T., Salazar, M., Labee , P., Buchel , S., Beemer , E., Pereira Marca , Y., Joshi, R., Rosero Abad , R. A., Clemente , M., Borsboom , O., Choi , Y., Kiemen , M., Schmidt, H. S., Eijkelhof, D., Maharjan , P., van Druten, E., El Feiaz , A., Paparella , F., Yadav, S., Siadati , S., Khaleghparast , S., Tamis , M., Shekhar , S., Hanselaar , C., Damianakis, N., Aria , D., Reyes Dreke , V., Gong , S., Pouresmaeil , K., Mukherjee , K., de Vries, G., Stolle, K. & Leferink, T.
1/11/20 → 31/10/24

NUMIWING: Numerical modelling of inflatable airborne wind energy systems
Schmehl, R. & Viré, A. C.
1/10/12 → 30/09/17

REACH: Resource Efficient Automatic Conversion of High-Altitude Wind
Schmehl, R., Peschel, J. O. & Schelbergen, M.
1/12/15 → 31/08/19

Rhizome: Development of an Autarkic Design-to-Robotic-Production and -Operation System for Building Off-Earth Habitats
Bier, H. H., Hidding, A. J., Latour, M. T. C., Laszlo, V., Cervone, A., Schmehl, R., Peternel, L., Gavin, K. G., Popovich, V. & Tang, Y.
1/04/21 → 30/04/22

VTOL Rigid Wing for Airborne Wing Energy
Schmehl, R.
1/09/18 → 31/05/19

Datasets/Software

ERA5 reanalysis data for Airborne Wind Energy Resource Analysis
Schmehl, R. (Creator), Schelbergen, M. (Creator), Bechtle, P. (Creator), Zillmann, U. (Creator) & Watson, S. J. (Creator), TU Delft - 4TU.ResearchData, 9 Oct 2018
DOI: 10.4121/UUID:646EAF3F-C90B-4F22-89BF-8986804DEF3C

Flight test data 20 kW kitepower system
Schmehl, R. (Creator), van der Vlugt, R. (Creator) & Fechner, U. (Creator), TU Delft - 4TU.ResearchData, 25 Feb 2020
DOI: 10.4121/UUID:5DA7126D-E402-4872-87A9-58EAEB3B6B82

Kite power flight data acquired on 24 March 2017
Oehler, J. (Creator), Schmehl, R. (Creator), Peschel, J. (Creator), Faggiani, P. (Creator) & Buchholz, B. (Creator), TU Delft - 4TU.ResearchData, 20 Dec 2018
DOI: 10.4121/UUID:37264FDE-2344-4AF2-860C-EFFDA9CAA3E8

Life Cycle Inventory (LCI) and Life Cycle Impact Assessment (LCIA) models of a future 50 MW Airborne Wind Energy Farm and a conventional 50 MW Wind Farm
Schmehl, R. (Creator), van Hagen, L. J. A. (Creator), Petrick, K. (Creator) & Wilhelm, S. (Creator), TU Delft - 4TU.ResearchData, 13 Feb 2023
DOI: 10.4121/21443214

Towing test data of the Kyushu University kite system
Rushdi, M. A. (Creator), Schmehl, R. (Creator), Dief, T. N. (Creator), Yoshida, S. (Creator), Fujimoto, D. (Creator) & Sawano, K. (Creator), TU Delft - 4TU.ResearchData, 12 May 2020
DOI: 10.4121/UUID:C3CEE766-2804-4C00-924F-8A9F6C8122FC