

Publikationen

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Jauch, C., *'Hydropneumatisches Schwungrad zur Energiespeicherung'*, filed at European Patent Office, Den Haag (PCT/EP2020/085226), 09.12.2020

Jauch, C., *'Windenergieanlage mit Einrichtung zur Wasseremission in die Atmosphäre'*, eingereicht beim DPMA (DE 10 2020 129 453.0), 09.11.2020

Jauch, C., *'Hydropneumatisches Schwungrad zur Energiespeicherung'*, eingereicht beim DPMA (DE 10 2019 133 840.9), 10.12.2019

Jauch, C.; Kloft, P.; Bartels, *'Auswuchtvorrichtung und Verfahren zur Kompensation der Unwucht von Rotoren von Windenergieanlagen'*, DPMA Patent DE102016003345A1 erteilt am 21.09.2017

Jauch, C., *'Kolbenspeicher mit ovalem Querschnitt zur Integration in ein Rotorblatt'*, DPMA Gebrauchsmuster 20 2016 000 658, IPC: F03/D 1/06, eingetragen am 23.02.2016

Jauch, C., *'Simulationsmodell für eine Windenergieanlage sowie Erzeugung und Verwendung'*, DPMA Patent DE 102011002842 B4, erteilt am 13.02.2014

Jauch, C., *'Simulationsmodell für eine Windenergieanlage sowie Erstellung und Verwendung' (Simulation Model for a Wind Power Installation, and Production and Use Thereof)*, Pub. No.: WO/2012/098170, International Application No.: PCT/EP2012/050735, International Filing Date: 18.01.2012, Publication Date: 26.07.2012

Jauch, C., *'Simulationsmodell für eine Windenergieanlage sowie Erstellung und Verwendung'*, eingereicht beim DPMA, (AZ 102011007434.1), am 14.04.2011

Dissertation

Jauch, C., *'Stability and control of wind farms in power systems'* Risø-PhD-24(EN), 202 p. (ph.d. thesis), 2006

Journalartikel mit peer-review

Gloe, A.; Jauch, C.; Craciun, B.; Zanter, A.; Winkelmann, J., ['Influence of Continuous Provision of Synthetic Inertia on the Mechanical Loads of a Wind Turbine](#)', Energies 2021, 14, 5185. DOI: 10.3390/en14165185

Rohr, A.; Jauch, C., ['Software-in-the-Loop Simulation of a Gas-Engine for the Design and Testing of a Wind Turbine Emulator](#)', Energies 2021, vol. 14 issue 10, n° 2898; DOI: 10.3390/en14102898

Jauch, C., ['Grid Services and Stress Reduction with a Flywheel in the Rotor of a Wind Turbine'](#), Energies 2021, vol. 14 issue 9, n° 2556; DOI: 10.3390/en14092556

Gloe, A.; Jauch, C., ['Grid Support with Wind Turbines: The Case of the 2019 Blackout in Flensburg'](#), Energies 2021, vol. 14 issue 6, n° 1697; DOI: 10.3390/en14061697

Thiesen, H.; Jauch, C., ['Application of a New Dispatch Methodology to Identify the Influence of Inertia Supplying Wind Turbines on Day-Ahead Market Sales Volumes'](#), Energies, vol. 14, issue 5, n° 1255; DOI: 10.3390/en14051255, 2021

Alhrshy, L.; Jauch, C.; Kloft, P., ['Development of a Flexible Lightweight Hydraulic-Pneumatic Flywheel System for Wind Turbine Rotors'](#), Fluids, vol. 5, issue 4, n° 162; DOI: 10.3390/fluids5040162, 2020

Thiesen, H.; Jauch, C., ['Determining the Load Inertia Contribution from Different Power Consumer Groups'](#), Energies, vol. 13, issue 7, n° 1588; DOI: 10.3390/en13071588, 2020

Jauch, C.; Gloe, A., ['Simultaneous Inertia Contribution and Optimal Grid Utilization with Wind Turbines'](#), Energies 2019, 12(15), 3013; DOI: 10.3390/en12153013

Hippel, S.; Jauch, C., ['Load Analysis of Hydraulic-Pneumatic Flywheel Configurations Integrated in a Wind Turbine Rotor'](#), Wind Energy, vol. 22, pp. 1190–1202, DOI: 10.1002/we.2349, 2019

Reichstein, T.; Schaffarczyk, A.P.; Dollinger, C.; Balaresque, N.; Schüle, E.; Jauch, C.; Fischer, A., ['Investigation of Laminar–Turbulent Transition on a Rotating Wind-Turbine Blade of Multimegawatt Class with Thermography and Microphone Array'](#), Energies 2019, 12, 2102; DOI: 10.3390/en12112102

Gloe, A.; Jauch, C.; Craciun, B.; Winkelmann, J., ['Continuous provision of synthetic inertia with wind turbines: implications for the wind turbine and for the grid'](#), IET Renewable Power Generation, vol. 13, issue 5, pp. 668–675, DOI: 10.1049/iet-rpg.2018.5263, 2019

Hippel, S.; Jauch, C.; Ritschel, U., ['Hydraulic-pneumatic flywheel configurations for controlling the inertia of a wind turbine rotor'](#), Wind Engineering, vol. 43, issue 2, pp. 114–132, DOI: 10.1177/0309524X18780386, 2019

Jauch, C.; Gloe, A.; Hippel, S.; Thiesen, H., ['Increased Wind Energy Yield and Grid Utilisation with Continuous Feed-In'](#)

[Management](#), Energies 2017, 10, 870; DOI: 10.3390/en10070870

Thiesen, H.; Jauch, C.; Gloe, A., ['Design of a System Substituting Today's Inherent Inertia in the European Continental Synchronous Area'](#), Energies, vol. 9, issue 8, n° 582; DOI: 10.3390/en9080582, 2016

Jauch, C., ['Controls of a flywheel in a wind turbine rotor'](#), WIND ENGINEERING, vol. 40, issue 2, pp. 173-185, DOI: 10.1177/0309524X16641577, 2016

Jauch, C.; Hippel, S., ['Hydraulic-pneumatic flywheel system in a wind turbine rotor for inertia control'](#), IET Renewable Power Generation, vol. 10, issue 1, pp. 33-41, DOI: 10.1049/iet-rpg.2015.0223, 2016

Jauch, C.; Nussel, N., ['Development of a Contactless Pitch Angle Measurement System'](#), WIND ENGINEERING, vol. 38, issue 6, pp. 621-632, 2014

Jauch, C., ['A Simple Wind Model for Fast Wind Farm Simulations'](#), WIND ENGINEERING, vol. 38, issue 5, pp. 523-534, 2014

Jauch, C., ['A flywheel in a wind turbine rotor for inertia control'](#), WIND ENERGY, vol. 18, pp. 1645-1656, 2015, DOI: 10.1002/we.1784, 2014

Jauch, C., ['Transient and Dynamic Control of a Variable Speed Wind Turbine With Synchronous Generator'](#), WIND ENERGY, vol. 10, pp. 247-269, DOI: 10.1002/we.220, 2007

Jauch, C.; Sørensen, P.; Norheim, I.; Rasmussen, C., ['Simulation of the Impact of Wind Power on the Transient Fault Behavior of the Nordic Power System'](#), ELECTRIC POWER SYSTEMS RESEARCH, vol. 77, issue 2, pp. 135-144, DOI: 10.1016/j.epsr.2006.02.006, 2007

Jauch, C.; Cronin, T.; Sørensen, P.; Bak-Jensen, B., ['A Fuzzy Logic Pitch Angle Controller for Power System Stabilization'](#), WIND ENERGY, vol. 10, issue 1, pp. 19-30, DOI: 10.1002/we.205, 2007

Jauch, C.; Islam S.M.; Sørensen, P.; Bak-Jensen, B., ['Design of a Wind Turbine Pitch Angle Controller for Power System Stabilisation'](#), RENEWABLE ENERGY, vol. 32, issue 14, pp. 2334-2349, 2007

Jauch, C.; Cronin, T., ['Simulation Model of a Wind Turbine Pitch Controller for Grid Frequency Stabilisation'](#), WIND ENGINEERING, vol. 29, issue 4, pp. 377-387, 2005

Jauch, C.; Sørensen, P.; Bak-Jensen, B., ['The Relevance of the Dynamic Stall Effect for Transient Fault Operations of Active-Stall Wind Turbines'](#), WIND ENGINEERING, vol. 29, issue 4, pp. 353-364, 2005

Konferenzartikel

Jauch, C.; Sørensen, P.; Bak-Jensen, B., ['Simulation Model of a Transient Fault Controller for an Active-Stall Wind Turbine'](#), WIND ENGINEERING, vol. 29, issue 1, pp. 33-48, 2005

Jauch, C.; Matevosyan, J.; Ackermann, T.; Bolik, S., ['International Comparison of Requirements for Connection of Wind Turbines to Power Systems'](#), WIND ENERGY, vol. 8, issue 3, pp. 295-306, DOI: 10.1002/we.160, 2005

Iov, F.; Hansen, A.D.; Jauch, C.; Sørensen P.; Blaabjerg, F., ['Advanced Tools for Modelling, Design and Optimization of Wind Turbine Systems'](#), JOURNAL OF POWER ELECTRONICS, Korean Institute of Power Electronics, vol. 5, No. 2, pp. 83-98, ISSN 1598-2092, April 2005

Jauch C.; Hansen, A.D.; Sørensen, P.; Blaabjerg, F., ['Simulation Model of an Active-Stall Fixed-Speed Wind Turbine Controller'](#), WIND ENGINEERING, vol. 28, issue 2, pp. 177-195, 2004

Rohr, A.; Jauch, C., ['Large Scale Test Bench for Emulating Grid Connected Wind Turbines of Different Sizes'](#), IEEE CPE-POWERENG 2019, 13th International Conference on Compatibility, Power Electronics and Power Engineering, 23-25 April 2019 - Sonderborg, Denmark, Conference Proceedings

Thiesen, H.; Jauch, C., ['Identifying electromagnetic illusions in grid frequency measurements for synthetic inertia provision'](#), IEEE CPE-POWERENG 2019, 13th International Conference on Compatibility, Power Electronics and Power Engineering, 23-25 April 2019 - Sonderborg, Denmark, Conference Proceedings

Thiesen, H.; Jauch, C., ['A dispatch methodology to secure power system inertia in future power systems'](#), 17th Wind Integration Workshop, Stockholm, 17-19 October 2018, Conference Proceedings

Jauch, C.; Gloe, A., ['Flexible Wind Power Control for Optimal Power System Utilisation'](#), WindAc Africa 2017, Cape Town, 14-15 November 2017, Conference Proceedings

Gloe, A.; Jauch, C., ['Measurements of the dynamic response of a wind turbine to excitations from the wind'](#), WindAc Africa 2017, Cape Town, 14-15 November 2017, Conference Proceedings

Gloe, A.; Jauch, C.; Craciun, B.; Winkelmann, J., ['Limitations for the Continuous Provision of Synthetic Inertia with Wind Turbines'](#), 16th Wind Integration Workshop, Berlin, 25-27 October 2017, Conference Proceedings

Thiesen, H.; Gloe, A.; Jauch, C.; Viebek, J., ['The Provision of Synthetic Inertia by Wind Turbine Generators: An Analysis of the Energy Yield and Costs'](#), 16th Wind Integration Workshop, Berlin, 25-27 October 2017, Conference Proceedings

Jauch, C.; Gloe, A., ['Improved feed-in management with wind turbines'](#), 15th Wind Integration Workshop, Vienna, 15-17 November 2016, Conference Proceedings

Gloe, A.; Thiesen, H.; Jauch, C., ['Grid frequency analysis for assessing the stress on wind turbines'](#), 15th Wind Integration Workshop, Vienna, 15-17 November 2016, Conference Proceedings

Hippel, S.; Jauch, C., ['Optimisation of the Concept of a Hydraulic- Pneumatic Flywheel System in a Wind Turbine Rotor'](#), 14th Wind Integration Workshop, Brussels, 2015, Conference Proceedings, DOI: 10.13140/RG.2.1.2424.1365

Huhn, M., Hopp, M., Jauch, C., ['Additional Design Criteria for Wind Turbines: Excitation to Mechanical Vibrations from the Power System'](#), 6. VDI-Fachtagung Schwingungen von Windenergieanlagen 2015, Bremen, VDI-Bericht 2242, pp. 1-10, DOI: 10.13140/RG.2.1.3870.6409

Hippel, S.; Jauch, C., ['Hydraulic-Pneumatic Energy Storage in a Wind Turbine for Enhancing the Power System Inertia'](#), 13th Wind Integration Workshop, Berlin, 2014, Conference Proceedings, DOI: 10.13140/2.1.3731.6160

Jauch, C., ['Wind Turbine Pitch Angle Controllers for Grid Frequency Stabilisation'](#), Proceedings of European Wind Energy Conference 2006, Athens, Greece

Jauch, C.; Islam, S. M., ['Identification of a Reduced Order Wind Turbine Transfer Function from the Turbine's Step Response'](#), Australasian Universities Power Engineering Conference, Hobart, Australia, 25-28 September 2005, Proceedings , pp. 353-356, 2005

Jauch, C.; Sørensen, P.; Bak-Jensen, B., ['International review of grid connection requirements for wind turbines'](#), In: Grid integration and electrical systems of wind turbines and wind farms (CD-ROM), Nordic wind power conference 2004 (NWPC 04), Göteborg (SE), 1-2 Mar 2004. (Chalmers University of Technology, Göteborg, 2004) 6 p.

Iov, F.; Hansen, A.D.; Jauch, C.; Sørensen, P.; Blaabjerg, F., ['Advanced tools for modeling, design and optimization of wind turbine systems'](#), In: Grid integration and electrical systems of wind turbines and wind farms (CD-ROM). Nordic wind power conference 2004 (NWPC 04), Göteborg (SE), 1-2 Mar 2004. (Chalmers University of Technology, Göteborg, 2004) 12 p.

Jauch, C. and Redfern, M A, ['A Simulation Model of a Phosphoric Acid Fuel Cell Power Plant'](#), Proceedings 38th International UPEC 2003, Thessaloniki, September 2003, Vol 2, pp 561-564

Institutsberichte

Alhrshy, L.; Jauch, C.; Bünning, N.; Schaffarczyk, A.P., ['Development of a Lightweight Hydraulic-Pneumatic Flywheel System for Wind Turbine Rotors'](#), WETI Hochschule Flensburg, 04.01.2021, DOI: 10.13140/RG.2.2.13569.89447

Jauch, C., ['First Eigenmodes Simulation Model of a Wind Turbine - for Control Algorithm Design'](#), WETI Hochschule Flensburg, 07.09.2020, DOI: 10.13140/RG.2.2.17192.19204

Gloe, A.; Jauch, C.; Thiesen, H.; Viebeg, J., ['Inertial Response](#)

[Controller Design for a Variable Speed Wind Turbine](#), WETI Hochschule Flensburg, 21.03.2018, DOI: 10.13140/RG.2.2.27846.57926

Jauch, C., [First Eigenmode Simulation Model of a Wind Turbine - for Control Algorithm Design](#), WETI Hochschule Flensburg, 21.12.2016, DOI: 10.13140/RG.2.2.15839.46244

Gloe, A.; Jauch, C., [Simulation Model Design and Validation of a Gearless Wind Turbine - For Fast Power Control to Enhance Congestion Management](#), WETI Fachhochschule Flensburg, 23.03.2016, DOI: 10.13140/RG.2.1.1697.5766

Haberl, A.; Jauch, C.; Jankowski, S., [Dynamische Netzstützung durch Windenergieanlagen](#), WETI Fachhochschule Flensburg, 02.07.2015

Hippel, S.; Thiesen, H.; Jauch, C., [Regelbares Schwungrad in einem Rotor einer Windenergieanlage zur Unterstützung der Netzfrequenzregelung](#), WETI Fachhochschule Flensburg, 13.03.2015, DOI: 10.13140/2.1.3076.8166

Norheim, I.; Mogstad, O.; Sørensen, P.; Jauch, C.; Pudjianto, D.; Anaja-Lara, O., [Case Studies on System Stability With Increased RES-E Grid Integration](#), SINTEF Energy Research, 10-11-2005, ISSN/ISBN: 82-594-2945-4

Norheim, I.; Lindgren, E.; Uski, S.; Sørensen, P.; Jauch, C., [WILMAR - System stability analysis](#), SINTEF-TR-F6212 (2005) (WILMAR Deliverable D5.1) 101 p.

Hansen, A.D.; Jauch, C.; Sørensen, P.; Iov, F.; Blaabjerg, F., [Dynamic wind turbine models in power system simulation tool DIgSILENT](#), Risø National Laboratory. Risø-R-1400(EN), December 2003. ISBN 87-550-3198-6, ISBN 87-550-3199-4 (Internet), ISSN 0106-2840

Populärwissenschaftliche Artikel

Jauch, C.; Alhrshy, L.; Kloft, P., [Flexible hydropneumatische Kolbenspeicher aus kohlefaserverstärktem Kunststoff zum Einsatz in Rotorblätter von Windenergieanlagen](#), Ingenieurspiegel Ausgabe 4 | 2019, p. 22-24, 11/2019

Gloe, A.; Jauch, C.; Räther, T., [Störfall im Flensburger Stromnetz – wie Windenergieanlagen den Blackout möglicherweise hätten verhindern können](#), Ingenieurspiegel Ausgabe 4 | 2019, p. 18-20, 11/2019

Rohr, A.; Gloe, A.; Jauch, C.; Thiemke, M.; Wilhelm, J.E., [Ein Windenergieanlagenemulator zum Test von Leistungseinspeisung im Netz](#), Ingenieurspiegel Ausgabe 4 | 2019, p. 5-8, 11/2019

Gloe, A.; Rohr, A.; Jauch, C.; Thiemke, M., [Windenergieanlagen, Schiffsmotoren und Stromnetze, Synergien im Test](#), Ingenieurspiegel Ausgabe 4 | 2018, p. 14-15, 11/2018

Hippel, S.; Jauch, C.; Kloft, P., [Entwicklung von gewichtsreduzierten hydropneumatischen Speichern für](#)

Schwungradsysteme in WEA-Rotoren, Ingenieurspiegel
Ausgabe 4 | 2017, p. 16-17, 11/2017

Gloe, A.; Jauch, C.; Winkelmann, J., ***Synthetische Trägheit aus Windenergie: ein Kompromissvorschlag***, Ingenieurspiegel
Ausgabe 4 | 2017, p. 13-14, 11/2017

Jauch, C.; Gloe, A., ***Verbessertes Einspeisemanagement mit Windenergieanlagen***, Ingenieurspiegel Ausgabe 4 | 2016, p. 16-18, 11/2016

Jauch, C.; Thiesen, H.; Gloe, A., ***Der Wert der Systemträgheit im Stromnetz vor dem Hintergrund der Energiewende***,
Ingenieurspiegel Ausgabe 4 | 2015, p. 62-63, 11/2015

Haberl, A.; Jauch, C., ***FH Flensburg erforscht dynamische Netzfrequenzstützung durch Windenergieanlagen***,
Ingenieurspiegel Ausgabe 4 | 14, p. 2-3, 11/2014

Jauch C., ***FH Flensburg erforscht dynamische Leistungsbereitstellung durch WEA***, Ingenieurspiegel Ausgabe
4 | 13, p. 20-21, 11/2013