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Employment

Development Engineer
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Technical University of Denmark
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21 Oct 2019 → present

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22 Nov 2022 → present

Research outputs

Fatigue S-N curve approach for impact loading of hyper- and visco-elastic leading edge protection systems of wind turbine blades
Hamers, T. W., Jespersen, K. M., Mikkelsen, L. P., Bech, J. I. & Johansen, N. F-J., 2023, *43rd Risoe International Symposium on Materials Science.* IOP Publishing, Vol. 1293. 9 p. 012021. (IOP Conference Series: Materials Science and Engineering).

High rate response of elastomeric coatings for wind turbine blade erosion protection evaluated through impact tests and numerical models
Jespersen, K. M., Eftekhar, M., Frost-Jensen Johansen, N., Bech, J. I., Mishnaevsky Jr., L. & Mikkelsen, L. P., 2023, In: International Journal of Impact Engineering. 179, 12 p., 104643.

Microscopy
Jensen, N. F., 2023, Risø, Roskilde, Denmark: DTU Wind and Energy Systems. 33 p. (DTU Wind Energy I; No. I-1554).

Estimation of leading edge erosion risk on wind turbines, repair prediction and mitigration strategy
Hasager, C. B., Hannesdóttir, Á., Badger, M., Bech, J. I., Johansen, N. F-J., Madsen, J. V. & Göçmen, T., 2022

Experimental study on the effect of drop size in rain erosion test and on lifetime prediction of wind turbine blades
Bech, J. I., Johansen, N. F-J., Madsen, M. B., Hannesdóttir, Á. & Hasager, C. B., 2022, In: Renewable Energy. 197, p. 776-789 14 p.

Graphene/sol–gel modified polyurethane coating for wind turbine blade leading edge protection: Properties and performance
Dashtkar, A., Johansen, N. F-J., Mishnaevsky, L., Williams, N. A., Hasan, S. W., Wadi, V. S., Silvello, A. & Hadavinia, H., 2022, In: Polymers and Polymer Composites. 30, 18 p., 096739112210741.

Repair of Wind Turbine Blades: Costs and Quality
Mishnaevsky Jr., L., Bendixen, B., Mahajan, P., Fæster, S., Johansen, N. F-J., Paul, D. & Fraisse, A., 2022, *Turbine Technology; Artificial Intelligence, Control and Monitoring.* IOP Publishing, 8 p. 032032. (Journal of Physics: Conference Series; No. 3, Vol. 2265).

Technologies of Wind Turbine Blade Repair: Practical Comparison
Mishnaevsky Jr., L., Johansen, N. F-J., Fraisse, A., Fæster, S., Jensen, T. & Bendixen, B., 2022, In: Energies. 15, 5, 17 p. , 1767.

Erosion safemode control demonstration
Hasager, C. B., Bech, J. I., Hannesdóttir, Á., Madsen, J. V., Johansen, N. F-J. & Vejen, F., 2021

How can we combat leading-edge erosion on wind turbine blades?
Hasager, C., Mishnaevsky Jr., L., Bak, C., Bech, J. I., Fæster, S. & Johansen, N. F-J., 2021, *DTU International Energy Report 2021: Perspectives on Wind Energy.* Holst Jørgensen, B., Hauge Madsen, P., Giebel, G., Martí, I. & Thomsen, K. (eds.). Risø, Roskilde, Denmark: DTU Wind Energy, p. 134-142 9 p.

Nanoengineered graphene-reinforced coating for leading edge protection of wind turbine blades
Johansen, N. F-J., Mishnaevsky Jr., L., Dashtkar, A., Williams, N. A., Fæster, S., Silvello, A., Cano, I. G. & Hadavinia, H., 2021, In: Coatings. 11, 9, 18 p., 1104.

Rain erosion of wind turbine blades and the effect of air bubbles in the coatings
Fæster, S., Johansen, N. FJ., Mishnaevsky, L., Kusano, Y., Bech, J. I. & Madsen, M. B., 2021, In: Wind Energy. 24, 10, p. 1071-1082 12 p.

Test Methods for Evaluating Rain Erosion Performance of Wind Turbine Blade Leading Edge Protection Systems
Johansen, N. F-J., 2020, Kgs. Lyngby: Technical University of Denmark. 165 p. (DCAMM Special Report; No. S276).

Solution to minimize leading edge erosion on turbine blades
Bech, J. I., Bak, C., Vejen, F., Madsen, M. B., Bayar, M., Skrzypinski, W. R., Kusano, Y., Halling, K. M., Saldern, M., Tilg, A-M., Fæster, S. & Johansen, N. F-J., 2019. 1 p.

Development of Single Point Impact Fatigue Tester (SPIFT)
Fraisse, A., Bech, J. I., Borum, K. K., Fedorov, V., Johansen, N. F-J., McGugan, M., Mishnaevsky, L. & Kusano, Y., 2018, DTU Wind Energy. 13 p. (DTU Wind Energy I; No. 751).

Impact damage reduction by structured surface geometry
Kusano, Y., Fedorov, V., McGugan, M., Andersen, T. L. & Johansen, N. F-J., 2018, In: Materials Letters. 221, p. 296-300

Impact fatigue damage of coated glass fibre reinforced polymer laminate
Fraisse, A., Bech, J. I., Borum, K. K., Fedorov, V., Johansen, N. F-J., McGugan, M., Mishnaevsky, L. & Kusano, Y., 2018, In: Renewable Energy. p. 1102-1112

Investigation of droplet path in a rain erosion tester
Gaunaa, M., Sørensen, N. N., Johansen, N. F-J., Olsen, A. S., Bak, C. & Andersen, R. B., 2018, In: Journal of Physics: Conference Series. 1037, 6, 10 p., 062030.

Activities

Leading edge erosion of wind turbines blades: damage, material properties and load mitigation.
Jakob Ilsted Bech (Invited speaker), Charlotte Bay Hasager (Other), Christian Bak (Other), Leon Mishnaevsky (Other), Søren Fæster (Other) & Nicolai Frost-Jensen Johansen (Other)
22 Aug 2019 → 23 Aug 2019

Solution to minimize leading edge erosion on turbine blades
Charlotte Bay Hasager (Speaker), Jakob Ilsted Bech (Other), Christian Bak (Other), Flemming Vejen (Other), Martin Bonde Madsen (Other), Mertcan Bayar (Other), Witold Robert Skrzypinski (Other), Yukihiro Kusano (Other), Kaj M. Halling (Other), Morten Saldern (Other), Anna-Maria Tilg (Other), Søren Fæster (Other) & Nicolai Frost-Jensen Johansen (Other)
2 Apr 2019 → 4 Apr 2019

Awards

Improving endurance of wind-turbine coatings for use in offshore environments
Johansen, N. F., Møller, P. & Bech, J. I.
Samfinansieret - Andet
01/06/2016 → 31/05/2019

Projects

3D imaging center
Poulsen, H. F., Gundlach, C., Dahl, A. B., Oddershede, J., Trinderup, C. H., Simonsen, S. B., Zheng, Y., Brink, B., Lauridsen, T., Thydén, K. T. S., Sanna, S., Baier-Stegmaier, S., Bentzen, J. J., Christensen, A. N., Sørensen, H. O., Mikkelsen, L. P., Fæster, S., Johansen, N. F., Mokso, R., Kjer, H. M., Christensen, A. N., Quagliotti, D., Zhang, Y., Rasmussen, P. W. & Dahl, V. A.
01/01/2016 → 31/12/2029

EROSION - Wind Turbine Blade Erosion: Reducing the largest uncertainties
Hasager, C. B., Sørensen, B. F., Bech, J. I., Bak, C., Skrzypinski, W. R., Mikkelsen, T., Fæster, S., Jr., L. M., Tilg, A., Hannesdóttir, Á. & Johansen, N. F.
01/04/2017 → 31/12/2021

Improving endurance of wind-turbine coatings for use in offshore environments
Johansen, N. F., Bech, J. I., Thomsen, K., Petersen, T., Dyer, K. & Niordson, C. F.
Samfinansieret - Andet
01/06/2016 → 03/09/2020

Datasets

Hyper and viscoelastic single point ball impact FEM model Abaqus data
Jespersen, K. M. (Contributor), Johansen, N. F. (Contributor), Eftekhar, M. (Contributor), Mishnaevsky Jr, L. (Contributor), Bech, J. I. (Contributor) & Mikkelsen, L. P. (Contributor), Zenodo, 2021
DOI: 10.5281/zenodo.5788015, https://zenodo.org/record/5788015