

Smart Vortex Generator for Perpetual Remote Monitoring of Wind Turbine Blades using Solid State Batteries

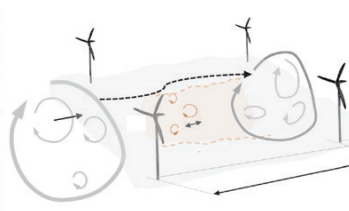


24/7 Operation
-30°C to +85 °C
Extra thin < 5 mm
BLE to 5G network

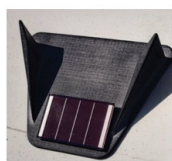
Ilika and WindTak are collaborating to design a Smart Vortex Generator (VG) for Wind Turbine Blades. WindTak's first generation VG can, when placed on the blade, increase the efficiency of turbine operation by 1-3% equating to a saving to the operator of up to \$20,000/year.



- 1-2 days installation time
- Efficiency increase ☒ 1-3+%



WindTak and Ilika are designing of a second-generation, perpetual, Smart VG, incorporating vibration sensor, BLE communication and an autonomous power circuit including a 2 mAh rechargeable solid state battery and vibration harvesting. The smart VG can sense changes in the vibration frequency spectrum of the blade, and provide a signature related to potential cracks, delamination, erosion... and avoid loss of operation until the next scheduled maintenance stop.



Component	Model
Solid State Battery	Ilika Stereax, 2 mAh, 3.5V
Accelerometer	Analog Devices MEMS
Bluetooth LE	nRF52840 BLE 5.2
Energy Harvester	PV/Vibrational

Stereax® P2000,
available 2022



Ilika Technologies Ltd, Unit 10a The Quadrangle, Abbey Park Industrial Estate, Romsey, Hampshire SO51 9DL

Tel: +44 (0)23 8011 1400 | Email info@ilika.com | www.ilika.com | [in /ilika-plc](https://www.linkedin.com/company/ilika-plc) | [@ilikaplc](https://twitter.com/ilikaplc)

Copyright 2021. All right reserved.

WindTAK Sp. z o.o. Wroblewskiego 38A, 93-578 Lodz, Poland

Tel.: +48 660 253 995 | [f https://www.facebook.com/profile.php?id=100064083189881](https://www.facebook.com/profile.php?id=100064083189881) | [in https://www.linkedin.com/company/windtak/](https://www.linkedin.com/company/windtak/)