

InLEP: Integrated Leading Edge Protection for Offshore Wind Turbine Blades at High Speed



Ismet Baran

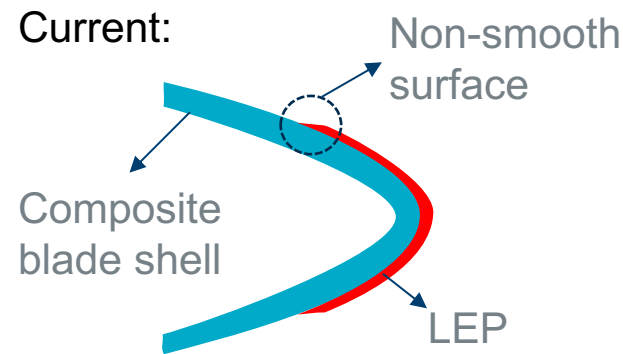
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InLEP: Integrated Leading Edge Protection for Offshore Wind Turbine Blades at High Speed



- Short lifetime
- Low max tip speed
- Significant AEP loss
- Unpredictable LEP failure



- + Long lifetime
- + High tip speed
- + Minimal AEP loss
- + Predictable LEP failure



InLEP: Project goals

GOAL is to reduce the offshore LCoE by 6% by developing an optimized LEP concept



Development of a durable LEP concept integrated into the blade



Understanding the bonding mechanisms



Building a rain erosion test setup to perform in-situ measurements



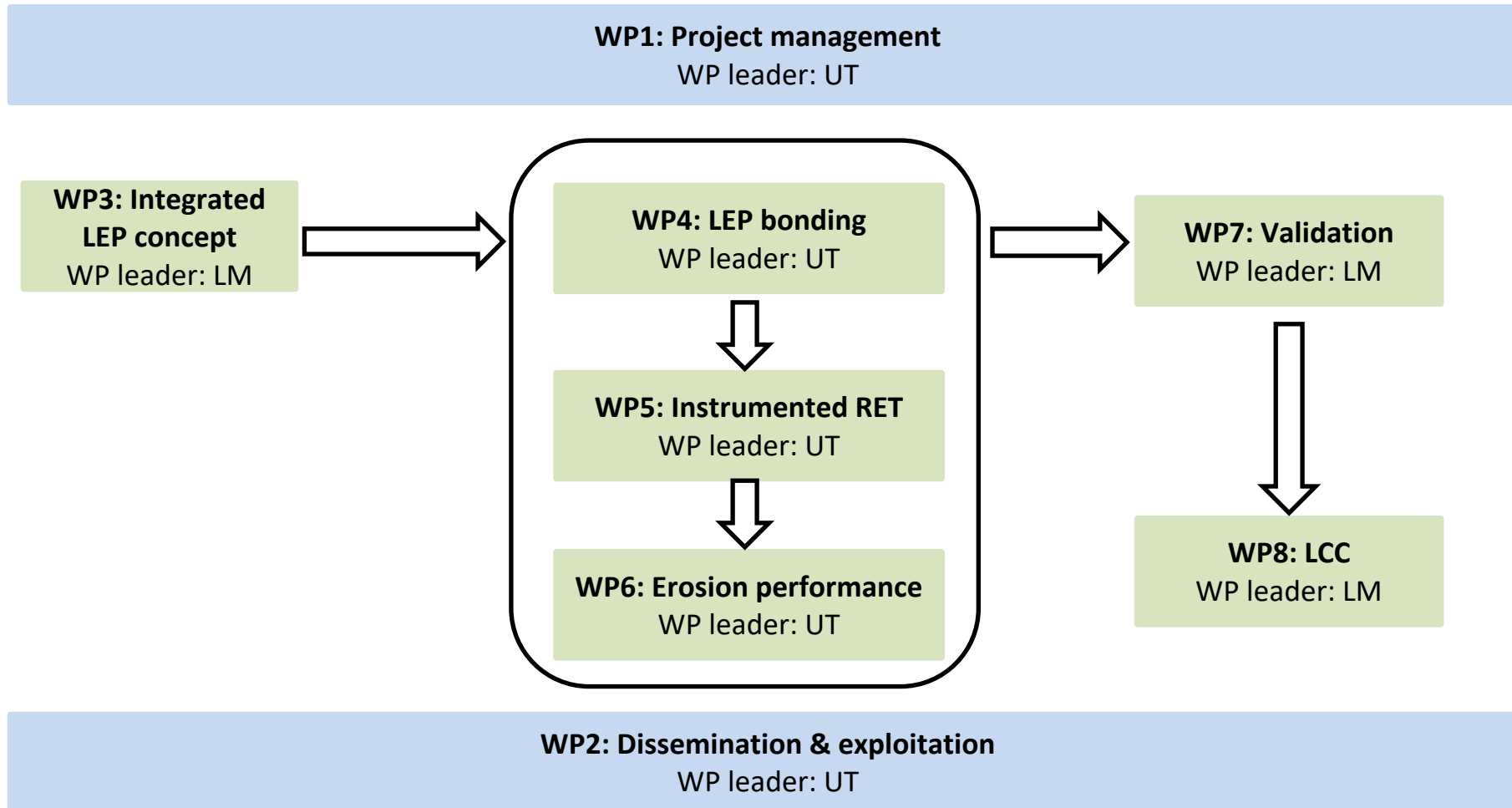
Identify rain erosion damage initiation and propagation mechanisms



To optimize and validate the LEP concept



InLEP: Approach



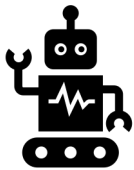
InLEP: Project results



- Validated LEP concept demonstrator at sub-component level



- Processing guidelines for a proper bonding of LEP material to the composite blade shell



- Comprehensive instrumented RET setup which will enable developing new knowledge on the erosion in NL



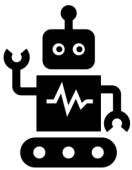
- Validated numerical design tool enabling the design and optimization of the LEP



- An analysis of the economic feasibility of the proposed integrated LEP concept



InLEP (2019-2022)



We are looking forward to InLEP!

Any questions?

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