INVITATION

28th NOVEMBER 2018

BladeMaker Conference in Bremerhaven

Experience the BladeMaker DemoCenter and meet experts to discuss the next steps for industrialized rotor blade manufacturing
# AGENDA

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00</td>
<td>Opening words</td>
</tr>
<tr>
<td>10:15</td>
<td>BLOCK 1: The BladeMaker Blade and Automation Concept</td>
</tr>
<tr>
<td>10:50</td>
<td>BLOCK 2: Direct Tooling and Direct Infusion</td>
</tr>
<tr>
<td>11:15</td>
<td>Coffee break</td>
</tr>
<tr>
<td>11:45</td>
<td>BLOCK 3: Material Placement Processes</td>
</tr>
<tr>
<td>12:15</td>
<td>BLOCK 4: Bonding, Handling and Grinding</td>
</tr>
<tr>
<td>12:45</td>
<td>Lunch</td>
</tr>
<tr>
<td>13:45</td>
<td>Podium discussion with blade manufacturers: Status-quo and next steps in industrialized blade manufacturing</td>
</tr>
</tbody>
</table>
| 14:30 | **Shuttle bus to the BladeMaker Democenter**  
(Kleiner Westring 19, 27572 Bremerhaven) |
| 15:00 | Guided tour through the BladeMaker Democenter |
| 16:30 | End of event / shuttle transfer back to t.i.m.e.Port II  
(Barkhausenstr. 2, 27568 Bremerhaven) |

The BladeMaker Conference in Bremerhaven is free of charge.  
Please register **until 1st November 2018** at: blademaker@iwes.fraunhofer.de.
BLOCK 1: 
THE BLADEMAKER BLADE AND AUTOMATION CONCEPT

10:15
- Challenges in blade manufacturing and approaches for industrialization (SINOI)
- Project overview & the BladeMaker blade (Fraunhofer IWES)
- Digital tool chain for manufacturing of composite rotor blades (Siemens Industry Software)
- Versatile automation solution for process control (Siemens AG)
- Lightweight gantry design used for automatic blade manufacturing (EEW-PROTEC)

BLOCK 2: 
DIRECT TOOLING AND DIRECT INFUSION

10:50
- Direct tooling with CFRP heating system and integrated functions (fibretech composites)
- Methods for matrix resin characterisation in automated manufacturing processes (Hexion)
- Infusion simulation (University of Bremen / Faserinstitut Bremen (FIBRE))
- The controlled ‘direct infusion’ process – automation to new quality standards (2KM)
**BLOCK 3: MATERIAL PLACEMENT PROCESSES**

11:45
- Pick & place handling of textiles (Fraunhofer IWES)
- Direct textile placement (University of Bremen / Institute for Integrated Product Development (BIK))
- Application of polyurethane foams (BASF Polyurethanes)
- Roving processing technologies for spar caps (Fraunhofer IWES)

**BLOCK 4: BONDING, HANDLING AND GRINDING**

12:15
- Fast curing polyurethane adhesives (Henkel)
- Bead on demand: New application nozzle for flexible geometry of adhesive beads (Fraunhofer IFAM)
- Vacuum handling of fiber material and precise web setting without floor station (J. Schmalz GmbH)
- Belt grinding of the blade surface (Jöst Abrasives)
In the BladeMaker project, 16 partners aligned their expertise to achieve savings of up to 10 percent in the rotor blade manufacturing process by more efficient production processes, the use of innovative materials and carefully selected automation approaches.

The BladeMaker DemoCenter has been established to test and to demonstrate material performance and processes for the wind turbine blade industry on full-scale manufacturing level. See our BladeMaker DemoCenter and discuss the technological developments.