

## COMET: K-Project

<b>PolyTherm</b>	
<b>Polymer Composites for Thermally Demanding Applications</b>	
<b>Main location</b>	Leoben, Styria
<b>Other locations</b>	Graz , Styria; Turin (IT); Southampton (U.K.); Dortmund (DE)
<b>Research programme</b>	<p>The R&amp;D approaches of the K-Project are aimed at application-oriented research in the field of functional polymers and multi-material structures for microelectronics and electrical engineering. Novel, thermally highly stressable materials, modelling and simulation methods as well as alternative manufacturing technologies are addressed.</p> <p>PolyTherm combines the expertise of materials scientists, polymer chemists and electrical engineers. The activities in the K-Project PolyTherm represent a clearly defined research cluster within the structures of the PCCL.</p>
<b>Planned realisation and outcomes</b>	
<p>Examples of technology developments in the K-Project PolyTherm comprise high power modules based on embedding technology, e.g., for automotive hybrid and E-vehicle motor control (e-mobility), high-precision pressure sensors with a target resolution (in terms of recorded altitude changes) of <math>\pm 10</math> cm, components with geometric adaptation due to thermally induced volume expansion for high-voltage generators and transformers as well as new manufacturing processes for thermoplast-based insulation components for high-voltage applications.</p>	
<b>History of establishment</b>	<p>The continuously growing integration density in electronics and the need for higher efficiency in generators and transformers lead to demanding operational conditions at higher temperature levels. These trends require improved or new materials to guarantee quality and reliability at the highest level. In the K-Project PolyTherm, 6 companies and 6 research institutes collaborate on solving these ambitious application-oriented questions.</p>
<b>Selected company partners</b> (max. 10)	<b>Selected scientific partners</b> (max. 5) <ol style="list-style-type: none"> <li>1. Polymer Competence Center Leoben</li> <li>2. Montanuniversität Leoben</li> <li>3. Graz University of Technology</li> </ol> <b>Selected international partners</b> <sup>1</sup> (max. 5) <ol style="list-style-type: none"> <li>1. Continental Automotive GmbH</li> <li>2. Politecnico di Torino</li> <li>3. University of Southampton</li> <li>4. University of Technology Dortmund</li> </ol>
<ol style="list-style-type: none"> <li>1. ams AG</li> <li>2. Andritz Hydro GmbH</li> <li>3. AT &amp; S Austria Technologie &amp; Systemtechnik AG</li> <li>4. AVL List GmbH</li> <li>5. Siemens AG Österreich</li> </ol>	
<b>Start of the K-Project</b>	01.04.2017 (4 years)
<b>Number of personnel</b>	14 FTE are involved (14 FTE are scientists)
<b>Total costs</b>	EUR 5.6 Mio
<b>Leader of consortium:</b>	Assoc. Prof. Dr. Frank Wiesbrock, Senior Researcher
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<sup>1</sup> Partners with headquarters outside Austria