

# XTribology

Excellence Center of Tribology

<b>Programm / Ausschreibung</b>	COMET, K2, 2. Ausschreibung 2014 - 2. Förderperiode	<b>Status</b>	laufend
<b>Projektstart</b>	01.04.2015	<b>Projektende</b>	31.03.2020
<b>Zeitraum</b>	2015 - 2020	<b>Projektlaufzeit</b>	60 Monate
<b>Keywords</b>	Tribologie, Schmierstoff, Simulation, Oberflächentechnologie, Tribodiagnostics		

## Projektbeschreibung

The COMET K2 Centre of Excellence for Tribology (XTribology) has been established and well developed during the first funding period as planned. Close collaborations with a number of national and international scientific partners, selected in view of thematic synergies, are important cornerstones. Scientific knowledge, especially from physics, chemistry, material science, mechanics, electronics and information technology, is integrated in our research work based on our holistic understanding of the fundamentals of tribology as a highly interdisciplinary field.

Project topics and goals as well as the research activity have been concentrated in the four areas: Lubricants and Surface Interactions (Area 1), Wear Processes (Area 2), Integrated Tribodiagnostics and -design (Area 3) and Multiscale Computational Tribology (Area 4). Fortunately, the development of Area 2 took place faster than expected. Due to the fact that a considerable part of the scientific work in Area 4, viz. simulation and modelling, has been integrated as work packages into projects of other Research Areas to optimise the holistic performance of Xtribology, one could erroneously estimate Area 4 to have developed slower.

The Xtribology funding period was started in April 2010 to harmonise the period with the Centre's business year. The monetary public funding of Xtribology is 50 % of the budget.

The approved total financial volume will not be reached in the 5 year period due to several reasons. Based on the turnover during the first four years, a total Xtribology budget of approx. € 47 million is expected.

The Centre - as of 30th June 2014 - has 142 employees (approx. 115 FTE; which corresponds to the lower Xtribology turnover), with approx. 30 % of the staff members from an international background. In January 2012, the Centre doubled the rented office and laboratory space at the "Research and Technology Center Wiener Neustadt" to approx. 4000 square metres. Important equipment purchases to perform the research projects were realised within the Xtribology budget as well as within the non-K budget during the last four years. Selected examples are a high-performance computer cluster (which has probably one of the highest capacities in the region), a robotised high-power direct diode laser-coating system, a high-temperature sheet metal forming test rig, as well as a coupled advanced mass spectrometry-gas chromatography system. This Centre is supported by the provinces of Niederösterreich, Vorarlberg and Wien, as well as by a high number of partners who are active in the research projects. The participation of new national and international company partners as well many long-term partnerships within Xtribology show the importance of tribology for the economy and the success of the Centre.

The Centre's organisation and management show long-term stability, with only minor changes and low fluctuation. All the Xtribology boards operated consensually. Our achievements indicate that the Xtribology target values will be reached as planned by the end of the 1st funding period. The collaboration with renowned international partners and the research results have led to an appreciable increase in the internationalisation and international visibility. Thus, the Centre helps strengthen Austria and Europe as a place of research, development and production.

## **Projektkoordinator**

**AC2T research GmbH**

## **Projektpartner**

**LIEBHERR-TRANSPORTATION SYSTEMSGMBH & Co KG**

**Srednevoljskiy Scientific and Research Institute of Oil Refining(PJSC "SVNIINP")**

**CARL BECHEM GMBH**

**Jansen AG**

**Tallinn University of TechnologyDepartment of Materials Engineering**

**The National Academy of Sciences of BelarusV.A. Belyi Metal-Polymer Research Institutea**

**Fundación TEKNIKER**

**Josephinum Research**

**Aerospace & Advanced Composites GmbH**

**NTB Interstaatliche Hochschule für Technik Buchs**

**Liebherr Machines Bulle S.A.**

**E-T-A Elektrotechnische Apparate GmbH**

**Lulea University of TechnologyDivision of Machine Elements**

**pratopac GmbH**

**Gubkin Russian State University of Oil and Gas**

**Gruner Aktiengesellschaft**

**SCHOELLER-BLECKMANN Edelstahlrohr GmbH**

**VAUTID Austria GmbH**

**Hochschule MannheimKompetenzzentrum Tribologie**

**Universität des SaarlandesLehrstuhl für Funktionswerkstoffe**

**Evonik Oil Additives GmbH**

**Robert Bosch GmbH**

**Cardiff University - School of Engineering**

**Optimol Instruments Prüftechnik GmbH**

**Wieland-Werke Aktiengesellschaft**

**Thermische Lohn Beschichtungs & Service GmbH**

**University of PisaDipartimento di Ingegneria civile e industriale**

**Collini Wien GmbH**

**Heraeus Deutschland GmbH & Co. KG**

**GKN Sinter Metals S.P.A.**

**Klüber Lubrication München SE & Co. KG**

**Danish Technological Institute**

**Wittmann Battenfeld GmbH**

**CEST Kompetenzzentrum für elektrochemische Oberflächentechnologie GmbH**

**KRAL AG**

**Tampere University of Technology**

**Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V.**

**BASF SE**

**Castolin Gesellschaft m.b.H.**

**Universität Linz**

**Mondi Neusiedler GmbH**

**Montanuniversität Leoben**

**Österreichische Tribologische Gesellschaft kurz genannt: ÖTG**

**Tyco Electronics Austria GmbH**

**OMV Downstream GmbH**

**Technische Universität Wien**

**AMAG rolling GmbH**

**FH OÖ Forschungs & Entwicklungs GmbH**

**ÖBB-Infrastruktur Aktiengesellschaft**

**OMV Exploration & Production GmbH**

**Virtual Vehicle Research GmbH**

**V-Research GmbH**

**Know-Center GmbH Research Center for Data-Driven Business & Big Data Analytics**

**Busatis GmbH**

**Software Competence Center Hagenberg GmbH**

**Fachhochschule Wiener Neustadt GmbH**

**Voith Austria GmbH**

**Technische Universität Graz**

**FWT COMPOSITES & ROLLS GmbH**

**Croma-Pharma GmbH**

**"IDENTEC SOLUTIONS AG"**

**MAGNA Powertrain GmbH & Co KG**

**Lenzing Technik GmbH**

**OET GmbH**

**INOCON Technologie Gesellschaft m.b.H.**

**Laakirchen Papier AG**

**Linde Gas GmbH**

**ZIMM Maschinenelemente GmbH + Co KG**

**Palfinger Europe GmbH**

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**Knorr-Bremse Gesellschaft mit beschränkter Haftung**

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**LIEBHERR-WERK TELFS GMBH**

**Innio Jenbacher GmbH & Co OG**

**Mondi Frantschach GmbH**

**Maschinenfabrik Albert GmbH**

**Teufelberger Seil Gesellschaft m.b.H.**

**SKF Österreich Aktiengesellschaft**

**voestalpine Stahl GmbH**

**Schunk Carbon Technology GmbH**

**Salvagnini Maschinenbau GmbH**

**voestalpine Rail Technology GmbH**

**AIT Austrian Institute of Technology GmbH**

**Diamond Aircraft Industries GmbH**

**Robert Bosch Aktiengesellschaft**

**Hans Künz GmbH**

**Semperit Technische Produkte Gesellschaft m.b.H.**

**Faigle Kunststoffe GmbH**

**Leobersdorfer Maschinenfabrik GmbH**

**FRONIUS INTERNATIONAL GmbH**

**AVL List GmbH**

**EBNER Industrieofenbau GmbH**

**Lingenhölle Technologie GmbH**

**Rembrandtin Coatings GmbH**

**Linde Hydrogen FuelTech GmbH**

**Prof. Dr. Eric Gard**

**Gazpromneft Lubricants Italia S.p.A.**

**Liebherr-Components Kirchdorf GmbH**

**Dr. Franz Novotny-Farkas**

**Electriq-Global Energy Solutions Ltd**

**Oerlikon Surface Solutions AG, Pfäffikon**

**Dewitz Consulting & Engineering GmbH**

**GGB Austria GmbH**

**IMS Gear SE & Co. KGaA**

**Tenaris Connections BV**

**Reintrieb GmbH**

**GGB France EURL**

**Bräcker AG**

**Künz GmbH**

**Klaus Urban GmbH**

**iwis motorsysteme GmbH & Co. KG**

**Dipl.-Ing. Johannes Oberlehner e.U.**

**TOTAL LUBRIFIANTS S.A.**

**University of Ljubljana**

**Bitrez Limited**

**AMS Engineering Prime SRL**

**ELSTA-Mosdorfer Gesellschaft m.b.H.**

**DAS Energy GmbH**

**Kalenborn Kalprotect GmbH & Co. KG**

**SKF B.V.**

**Universität Bremen**

**Wittur Austria GmbH**

**Daido Metal Co., Ltd. -organizacni slozka,The European Technical Center**

**Toyota Motor Europe NV/SA**

**University of LeedsSchool of Mechanical Engineering (iFS)**

**The University of Texas at Arlington**

**Johann Glück Werkzeug- und Maschinenbau Ges.m.b.H. & CO KG**

**LUKOIL Lubricants Austria GmbH**

**Coherent Europe B.V.**

**AB SKF**

**EPFL - Ecole Polytechnique Federale De LausanneInstitute of Materials - IMX**

**Wanggo Gummitechnik GmbH**

**Liebherr-Werk Ehingen GmbH**

**W. Hamburger GmbH**

**Universidad de Castilla-La ManchaDepartamento de Ingeniería Eléctrica, Electrónica, Automática y Comunicaciones**

**Buntmetall Amstetten Gesellschaft m.b.H.**