

**OVERVIEW OF RESEARCH PROJECTS AND COLLABORATIONS 2013-2018
DR. FRANK JÖRG CLEMENS**

APPROVED RESEARCH PROJECTS (LAST 5 YEARS)

YEAR/MONTHS	FUNDING AGENT	PROJECT
Since 2017 24M	CTI 26093.1 PFIW-IW	Development of feedstocks for extrusion of thin structured Si ₃ N ₄ parts like hollow fibers, rods and films" (ExTiSi)
Since 2017 48M	SNF / SSSTC 2016 IZLCZ2_170276 / 1	High Performance Nanostructured Transparent Conductors based on TCO inks"
2017 06M	Industrial funding	Development of ZrO ₂ feedstock for ceramic injection moulding
Since 2016 24M	CTI 18816.1 PFIW-IW	Hellbuntes antistatisches Garn für Arbeitsschutzbekleidung (BRICANT)
Since 2016 24M	Industrial funding	Special Al ₂ O ₃ ceramic structures
2016 12M	SNF 206021_164024	Fundamental research on decomposition processes during thermal treatment of thermoplastic based ceramic feedstocks / Basic thermal gravimetric analysis Device for Decomposition Processes
2016-2017 18M	COST C15.0110	Self-ordered nanostructured arrays of piezoelectric ZnO and BaTiO ₃ grown by anodization (NANOPIEZO)
2015-2017 24M	CTI 17614.1 PFLS-LS	Development of a 3D printed compliant band structure with integrated piezoresistive strain sensor material (CoPiSens)
2015-2016 18M	COST C14.0099	Thin lead free ferroelectric fibres with oriented grain growth by tailoring inorganic-organic interface (LeaFIInOrFace)
2015-2016 06M	Industrial funding	Porous carbon structures by extrusion method
2015-2017 24M	CTI 17475.1 PFIW-IW	Precision processing of Al ₂ O ₃ axial-symmetrical structures by thermoplastic extrusion processing(PrePoAlEx)
2014-2105 2M	CTI 17154.1 INNO13-16-NM	Pressure Sensitive Yoga Mat Prototype (SenMaPro)
2014-2015 12M	Industrial funding	Untersuchung von piezoresistiven Sensors in Bänder im medizinischen Umfeld.
2013-2015 12M	CTI 16378.1 PFIW-IW	Development of new binder system and in-situ debinding and sintering process for ceramic core manufacturing by CIM processing (DeSiCIM)
2014 12M	COST C13.0143	Electrospun Pb-Free Ceramic-Nylon Ferroelectric Hybrid Materials for Sensor Applications (FerroSens)
2013-2015 24M	CCEM	Development of attrition resistant fluidised-bed methanation catalysts (ARRMATplus)
2013-2014 12M	CTI 14927.1 PFLS-LS	Integration eines faserbasierten, piezoresistiven Sensors in Bänder zur Messung des Anpressdruckes in medizinischen, prophylaktischen und sportlichen Anwendungen bis hin zu Lifestyle Produkten (PieSoMed)
2013 12M	COST C11.0142	Novel KNN Fibres based on ferroelectric nanopowder (SIMUFER)

COLLABORATION WITH NATIONAL/INTERNATIONAL UNIVERSITIES (LAST 5 YEARS)

YEAR/MONTHS	SUPERVISION	PROJECT
Since 2018	PhD Student	Fabrication of PVDF/BaTiO ₃ /Al@Al ₂ O ₃ nanocomposite and investigation of its dielectric and electrical energy storage behavior
Since 2018 06M	Master Student	FDM printing of preceramic polymers
Since 2018 06M	Bachelor Student	3D Printing of alumina structures using FDM method
2017-2018 06M	Bachelor Student	Synthesis of hydroxyapatite fibres using the electrospinning method
2017-2018 12M	PhD Student	NbC – Fe based cemented carbide by pressing and thermoplastic process methods
2017	Master Student	Soft Elastomer Sensor Structures Using Additive Manufacturing Methods
2017	Bachelor Student	Synthesis of BaTiO ₃ Nanofibers and their influence on the properties of BaTiO ₃ based composite fibers
2016-2017 06M	Master Student	Antistatic polyamide fibers using conductive electrical particles
2016-2017 06M	Bachelor Student	Die Herstellung einer Tricalciumphosphat-Scaffold-Struktur mithilfe des Fused-Deposition-Modeling-Verfahrens
2016-2017 06M	Bachelor Student	Electrospinning of zirconium dioxide based ceramic fibers
2016 06M	Master Student	3D printing of soft elastomers based gauge sensor structures using additive manufacturing methods
2015-2107 12M	PhD Student	Investigation of mechanical and dielectric properties of Li ₂ O-Al ₂ O ₃ -SiO ₂ (LAS) glass-ceramic and silicon nitride composites
2015-2016 18M	PostDoc	Design and characterisation of polymer-ceramic fibre interphase in hybrid materials for ultrasonic application (PolCerIntHyb)
2015-2016 06M	Bachelor Student	3D Printing of Ferroelectric Grid Structures by Fused Deposition Ceramics
2015 06M	Bachelor Student	3D Printing of Lead Zirconia Titanate Grid Structure by Tailoring the Process Parameters and Polymerie Binder of Ceramic Feedstocks
2015	Bachelor Student	Development of Piezoelectric BaTiO ₃ Nanotubes by Anodization and Hydrothermal Synthesis
2014 06M	Bachelor Student	Fabrication of hierarchical structured silica catalyst support from the assembly of silica nanoparticles
2014 06M	PhD Student	“Dielectric CaCu ₃ Ti ₄ O ₁₂ nanofibers by electrospinning for energy application”
2014 03M	PhD Student	Magnéli phases sensor fibres: Manufacturing, properties & applications
2012-2013 06M	Master Student	Development and investigation of ferroelectric fibres, stipes and bars for different ferroelectric applications
2013 09M	PhD Student	Preparation and properties of layered ceramics by thermoplastic co-extrusion
2013 06M	Master Student	Development of polymer coatings for PZT monofilament 1-3 polymer composites
2013 06M	Master Student	KNN powder synthesis and fabrication of grain oriented fibers
2012-2014 24M	PostDoc	Lead-free piezoelectric fibres based on potassium sodium niobate (KNN) synthesised by molten salt method
2012-2013 12M	PhD Student	Development and characterization of nanostructured TiO ₂ based photocatalysts for hydrogen production