

# Jun. Prof. Dr. Jesus Gonzalez-Julian

Affiliated with Institute of Energy and Climate Research (IEK-1)

BMBF Young Investigators Group: Ceramic Matrix Composites



“The first goal is to establish a new group based on Ceramic Matrix Composites in my institute, and then contribute to the “*Energiewende*” with more efficient materials for power generation systems”

**Research project:**

The aim of the group is to develop a new class of ceramic matrix composites (CMCs) to increase the operating temperature of power generation systems, leading to higher efficiency levels and less harmful emission.

This new class of CMCs is based on a MAX phase ceramic matrix containing short fibers. MAX phases are a new family of materials that bridge the gap between ceramics and metals, meanwhile the fibers will enhance the mechanical properties of the final components.

The project covers from the synthesis of the MAX phase powder and the processing of the ceramic matrix composites to the manufacturing of components and their testing under realistic environmental conditions.

**What is/has been the greatest challenge as head of a young investigators group:**

To organize a new group with motivated and passionate people

**Start of funding period:**

September 2016

**End of funding period:**

August 2021

**Staff:**

3 PhDs students

**University affiliation:**

Junior Professor (W1), RWTH Aachen, Institut für Gesteinshüttenkunde

**Cooperations:**

Drexel University, Tokyo Institute of Technology, Institute of Ceramics and Glass, Belgian Ceramic Research Center

**Further Information:**

<http://www.fz-juelich.de/iek/iek-1/EN/AboutUs/Ansprechpartner/Gruppen/CeramicMatrixComposites.html?nn=510628>