

## Jörg Exner's research visit at New Mexico Tech in Socorro, NM, USA



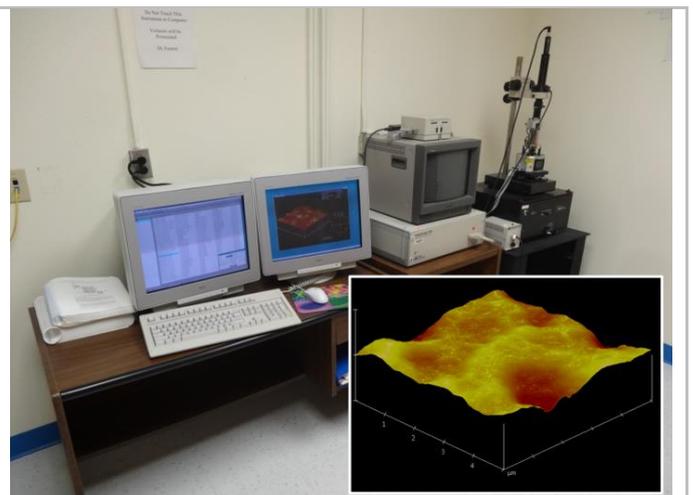
Research assistant Jörg Exner from the Department of Functional Materials (Prof. Moos) spent 3 months at the New Mexico Institute of Mining and Technology in Socorro, NM, USA at the end of 2014. During his stay, he worked within the research group of Prof. Paul A. Fuierer at the Materials and Metallurgical Engineering Department. The visit is part of an ongoing PhD/student exchange between both departments in the framework of the Materials World Network. The projects in the Materials World Network are co-funded by the German Research Foundation (DFG) and the National Science Foundation (NSF).

The town of Socorro itself is located in heart of New Mexico. Its university, the New Mexico Institute of Mining and Technology (or mostly referred as New Mexico Tech or NMT), takes pride in a 125 year long history. Starting with a focus especially on mining and petroleum engineering, activities were gradually extended to atmospheric, geo- and astrophysics, as well as information technology and materials engineering. With approximately 2000 students, it is one of the smaller universities in the US.

Jörg Exner's research involves the investigation of Bismuth-Vanadates, an oxygen ion conducting ceramic with potential applications in the field of gas sensors and ion conducting membranes. Hereby, especially ceramic thick films produced by a novel spray coating technique called Aerosol-Deposition Method (ADM) are of particular interest. During his stay, he gained experience in using an Atomic Force Microscope to study the surface morphology of different aerosol-deposited films.



Project meeting - from left to right: Kevin Ring (NMT student), Max Streibl (intern), Jörg Exner (research assistant), Prof. Paul Fuierer



Atomic Force Microscope with a measured surface of an alumina film produced by Aerosol Deposition

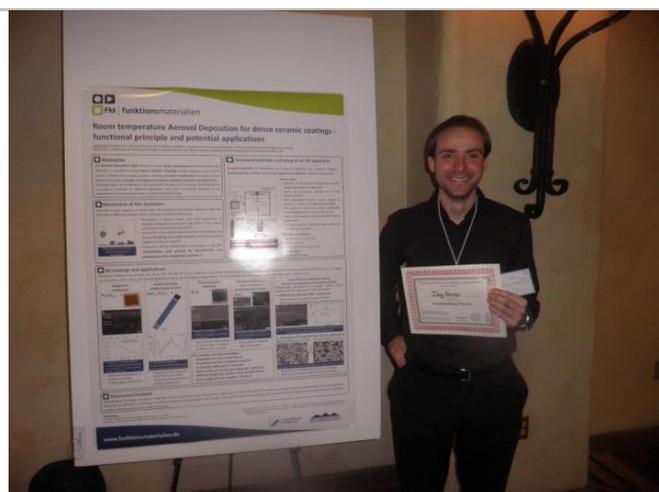
Furthermore measurements of the refractive index of transparent films were conducted.

At the same time, Maximilian Streibl, a Bayreuth graduate student in Materials Science supported Mr. Exner's research work by doing his internship at Prof. Fuierer's group.

Both had several opportunities to become involved in both the scientific and the cultural life in the US.

Mr. Exner attended the 26<sup>th</sup> Rio Grande Symposium on Advanced Materials in Albuquerque to present an overview about the latest achievements in the field of ADM that were accomplished at the Department of Functional Materials. The presented poster was awarded as outstanding poster.

The symposium took place within the week of the famous "Albuquerque International Balloon Fiesta", so there was also the chance to see the breathtaking view of the mass ascension of hundreds of balloons right after dawn.



Poster Award at Rio Grande Symposium on Advanced Materials

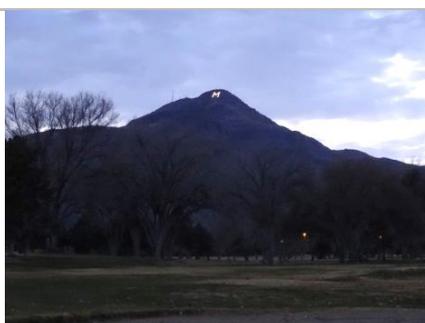


Albuquerque International Balloon Fiesta - from left to right: Prof. Paul A. Fuierer, Idil Ayans (NMT PhD student), Jörg Exner

Besides scientific education, also the cultural and personal experience was important. Socorro and New Mexico offer a pleasant way to witness the diverse American landscape and get in touch with the American culture. Very special thanks in this context go to Prof. Paul A. Fuierer for his exceptional hospitality and collaboration.



400 year old San Miguel Mission in Socorro - one of the oldest catholic churches in the US



"M-Mountain" above Socorro, with a 50 m by 35 m large painted M (for mining)



Very Large Array (VLA) – an unique radio astronomy observatory near Socorro