USCIS Nebraska Service Center
850 S. Street
Lincoln, NE 68508

Re: I-140 Immigration Petition in EB1-Extraordinary Ability for Dr. Clement Riedel

Dear Sir or Madame,

It is my pleasure to express the strong support of Dr. Clement Riedel's petition for the EB 1 - Extraordinary Ability (I-140 Form) to obtain permanent residence status in the United States. I would like to underline that his outstanding achievements in research will be of benefit for United States.

Currently, I am the President of NT-MDT Development Inc. (Tempe AZ) – a company involved in the development of scanning probe microscopy (SPM) instrumentation and applications. Prior to March of 2011 I was employed by Agilent Technologies working as Senior Applications Scientist in the scanning probe microscopes division. Before joining Agilent Technologies in April of 2007 I was Principal Scientist at Veeco Instruments Inc. (now Bruker Nano Division, Santa Barbara, CA) - the world leader in scanning probe microscopes. Before my industrial employment (In August 1995 I was employed as Staff Scientist by Digital Instruments, the company that was later bought by Veeco Instruments), I was the director of the scanning tunneling and atomic force microscopy Laboratory in the Materials Research Center of Freiburg University (Germany) during the period of 1990-1995. During the last twenty years, my research interests are in the applications of scanning probe microscopes to a broad range of materials of fundamental and technological importance. The results of these studies are published in more than 180 per-review articles, in 14 reviews/chapters and in a book (written together with M.-H. Whangbo) "Surface Analysis with STM and AFM." VCH Publishers, Weinheim, 1996. Currently, my activities are related to research and development in the field of scanning probe microscopy and its applications to soft matter (polymer and bio-related materials).

I have not met Dr. Riedel in person but I am quite familiar with his research because during last 5 years my research interests were in the same field of local electric and dielectric measurements using scanning probe microscopy. Upon entering this field I have discovered that among few research groups, which are pursuing the attractive goal of bringing dielectric spectroscopy measurements to the small scale, two teams: one in Northeastern University in Boston and another - in San Sebastian (Universidad del Pais Vasco) are the most advanced ones. These groups have also joint papers (for which Dr. Riedel is the first author) as the evidence of their close collaboration. Dr. Riedel was the most active participants of this collaboration. His extraordinary ability in this area has been demonstrated by providing a major contribution to original scientific publications to high rank research periodicals. Dr. Riedel's research has widely spread to the community and has been cited by numerous groups (including mine) in US and internationally.

In the paper "Determination of the nanoscale dielectric constant by means of a double pass method using electrostatic force microscopy", which was published in Journal of Applied Physics in 2009, the researchers for the first time, conducted quantitative measurement of

dielectric constants of two polymers in a small location of a couple of tens of nanometer in diameter. The obtained results, which were generated by the interplay between the experimental measurements and their appropriate theoretical analysis, has proved the unique ability of atomic force microscopy (AFM) based techniques for quantitative studies of dielectric properties at the small scale. This achievement is extremely important for modern material characterization because the dimensions of functional and technological structures are continuously shrinking to the nanometer scale. This work was followed by another – "Nanodielectric mapping of a model polystyrene-poly(vinyl acetate) blends by electrostatic force microscopy", which has appeared in 2010 in Physical Review E, that extend the local measurements to the imaging of heterogeneous structures and to distinguishing their individual constituents and lateral distribution. This characterization capability is invaluable for the advanced compositional analysis of multi-component materials, which are dominant in majority of technological applications.
The follow-up of this work has been published in the paper "Imaging dielectric relaxation in nanostructures polymers by frequency modulation electrostatic force microscopy", which was published in Applied Physics Letters in 2010. In this manuscript, the authors reported the important results of not only practical applications but also fundamental science. The various properties of amorphous polymers undergo changes on the transition from elastic to rubbery behavior, which happens in the glass transition region where molecular motion if macromolecules is liberated. Macroscopic measurements of such transitions are often examined with dielectric spectroscopy, particularly, for the materials with a large content of dipoles or charged molecules. Again the observations of this phenomenon at the small scale have not been done until the AFM-based dielectric measurements were initiated. The mentioned paper is one of the first, which addressed and well documented this capability. In general, the mentioned papers have a strong impact on the characterization of the local electric and dielectric behavior of materials and they become of fundamental importance in this application field.

As a researcher who spent a quarter of century (mostly in the USA) working in the area of scanning probe microscopy and its applications to the characterization of materials, I do strongly believe that the United States needs to keep further its leading position in the nanotechnology and its practical applications, by attracting to its work force the outstanding researchers like Dr. C. Riedel. Today, Dr. Riedel is working at the University of California in Berkeley, one of the best universities in US and in the world to perform research in its field of specialization of dielectric and dynamics properties of soft and biological material at the nanoscale. I believe that Dr. Riedel will continue to bring his excellent research skills to enhance US science and technology if he can get I-140 Immigration Petition approval based on his extraordinary research ability.

Dr. Riedel is an accomplished researcher and we need to keep his talent and expertise in our country. Therefore, I am cordially asking the USCIS to review Dr. Riedel important scientific contributions and his extraordinary research ability.

Thank you very much for your consideration of the Dr. Riedel's petition. In case of the additional information is needed, please, don't hesitate to contact me at 480-559-0830.

May 22, 2014

Serguei Magonov,
PhD, President,
NT-MDT Development Inc.