**Project Manager Qualifications & Organization Description**

**Uwe Kortshagen** is a Distinguished McKnight University Professor in the Department of Mechanical Engineering at the University of Minnesota, with graduate faculty appointments in Physics, Chemical Engineering, and Materials Science. His research is in the area of low temperature plasmas processing science and in the plasma synthesis of nanomaterials and their applications. He earned his Diploma degree in Physics in 1988, his Ph.D. in Physics in 1991, and his Habilitation in Experimental Physics in 1995 from the Ruhr University Bochum, Germany. In 1996, he joined the Department of Mechanical Engineering at the University of Minnesota as Assistant Professor, where he was promoted to Associate Professor in 1999, and to Professor in 2003. He served the Department as Director of Graduate Studies from 2006-2008 and as Department Head from 2008-2018. He is Fellow of the American Physical Society, the American Society of Mechanical Engineers, the Institute of Physics (UK), and the International Plasma Chemistry Society, and recipient of the 2015 Plasma Prize of the American Vacuum Society.

His cumulative research funding is about $34M. He has directed several multi-investigator research teams, including a recent Army Research Office MURI project on “New Materials from Dusty Plasmas.” His work has been published in about 200 journal articles, including papers in several *Nature* family journals, *Nano Letters*, *Advanced Materials*, and *Physical Review Letters* and received more than 12,000 citations. He holds 4 US patents. His plasma synthesis technique has been licensed to 3 different companies.

The **University of Minnesota** offers world-class infrastructure for this project. The MoS2 synthesis will be performed in Kortshagen’s laboratory, which is part of the **High Temperature and Plasma Laboratory** in the Department of Mechanical Engineering. This lab is one of the best equipped plasma technology laboratories in the world. His laboratory includes ten custom-built plasma reactors and facilities for nanocrystal processing that will be available to this project. In addition, the team has access to a large number of shared materials characterization instruments at the University of Minnesota Materials Characterization Facility (“CharFac,” http://www.charfac.umn.edu/), including a small angle X-ray scattering facility, and an electron microscopy center. Several machine and glass shops are also available at the University of Minnesota.