Title: The Study on Wear Resistance of Coated Modified Rubber

Abstract: In varied applications such as oil and gas production which include pipes, valves and seals, there are different degradation mechanisms including wear and wear-corrosion. For instance, rubber seals under dynamic working conditions suffer from severe wear because of high contact friction, leading to the failure service of bearings. Thus, robust protective coatings with low coefficient of friction and high wear resistance are highly required. The development of diamond-like carbon (DLC) films has been the focus point in recent years due to its ultralow friction and wear performance under both lubricated and non-lubricated conditions. Here it will be introduced that the research progress of superhard film in wear resistance modification of rubber surface in the past decade. Furthermore, some of the latest DLC-coated rubber surface modification studies will also be highlighted.

Prof. Feng WEN obtained his Ph.D degree from Southwest Jiaotong University, China in Jan. 2006. He became a Prof. in Dec. 2012 and now he works at the School of Materials and Chemical Engineering of Hainan University.

He has ever taken co-operated research in Shizuoka University of Japan as guest Professor (08-01-2010 to 11-30-2010), and visited Sidney University (07-29-2015 to 09-23-2015) and Groningen University of Netherlands (12-22-2016 to 12-17-2017) as a visiting scholar. His research fields include Photocatalysis Thin Film Materials, Corrosion and Protected Coatings, Super-hard Films, Biomaterials Surface Modification and Surface Micro-pattern.

Up to now, he has already published more than 70 papers in Journals and International Conference and 42 papers have been indexed by SCI, EI and CPCI (called ISTP before). He presided over 15 scientific research projects including the National Natural Science Foundation of China and key projects in Hainan Province. He obtained Youth Science and Technology Award of Hainan Province in 2011 and Excellent doctoral dissertations of Sichuan Province in 2007. He also won two first-class prizes for provincial scientific and technological progress (rank fourth and eighth), one second-class prize for provincial scientific and technological progress (rank third) and one third-class prize for provincial scientific and technological progress (rank first).