

Design and Testing of High Performance Fuel Filters Exposed to Vibration
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The paper will explore the retention of fine particles in the demanding conditions faced in modern high efficiency diesel fuel systems. First, it will discuss the development of an appropriate test methodology. For this, a variation of the SAE J1858 test method was used that includes both a particle capture phase with dust loading, and a particle retention phase with applied vibration. This test is designed to mimic the behavior of a dust laden filter and the potential for particle migration in operating environments. Using this test method, the performance of a variety of fuel filter media were examined. Traditional composite fuel media in single and two stage configurations will be compared along with a fully synthetic alternative composite designed to improve particle retention. Consideration of the benefits of synthetic media over current resin bonded composite media will also be discussed.