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## NIST GLASS BEAD CHALLENGE TESTING – AN OVERVIEW

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### ABSTRACT

Dry NIST Glass Bead challenge testing has been pioneered by Whitehouse Scientific in the UK and further expanded by DuPont in the USA. Many publications by Dr. Graham Rideal of Whitehouse and by Dr. Ernest Mayer of DuPont have detailed the procedure and presented a great deal of experimental data on a wide variety of dry filter media, which demonstrated the reliability and the unambiguous media micron ratings of this method. In addition, the micron-ratings were compared to Capillary Flow Porometer (CFP) values and a strong correlation was found to exist. However, static effects between the dry glass beads and the media caused erroneous results in some instances, such that a wet procedure had to be developed. This paper will present an overview of this test method, some additional test data, and how a reliable wet test method was achieved.

### Bio

Dr. Mayer is a Senior Consultant with DuPont, Wilmington, DE specializing in SLS technology since 1980. He received his B.S. and M.S. Chem. Eng. Degrees from Columbia University, New York City, NY and Ph.D. in Chem. Eng. From U. of Delaware, Newark, DE. Dr. Mayer has a brilliant professional career, among his numerous awards are Tau Beta Pi, Sigma Xi, Deans' Lists, 3 Eng. Excellence Awards, 7 Environmental Respect Awards, Class 'A' bonus, AFSS Frank Tiller award in 1996, AFSS Fellow award in 2000, and Lifetime Achievement award in 2005 (first non-academic to receive it). He is a member of

AWWA, AIChE, WEF, and AFSS (Board of Directors since 1988, Chairman of Chapter Affairs/Users Committee; plus member of three other committees). He has organized/chaired three technical conferences and was the Co-chair of World Filtration Congress in 2004. He published over 200 papers/publications and has 2 patents.