October 2014

Society for the Advancement of

Materials and Process Engineering

New Jersey Chapter

We are Pleased to Present the Featured Guest Speaker for our October 2nd Meeting:



Testing the Test: Diagnosing a Broken Test Protocol

Russell J. Caspe, Ph.D.

Materials and Process Engineering
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ABSTRACT

Ground soldier helmet systems are subject to a variety of ballistic tests. The most common test which simulates fragmentation threats is the V50 test which predicts the velocity at which it can be expected that 50% of a given fragment size will completely penetrate the armor. 4 grain right center cylinder fragments have posed an

exceptional challenge to Gentex particularly in aramid reinforced phenolic/polyvinyl butyral systems. Tests performed on identical helmets at different locations and even at the same location but at different times have resulted in wide V50 swings causing unexpected test failures. This presentation will explore the effort Gentex undertook to determine the root cause, which surprisingly shone a spotlight on the hardened steel, precisely machined fragments rather than the helmet systems themselves.

BIOGRAPHY

Russell Caspe has been with the Gentex Corporation since September 2013 as a Materials Scientist and is the Section Lead of the Advanced Engineering Group. Dr Caspe is responsible for materials development and evaluation for use in both aircrew and ground helmet systems. While most of his work involves various forms of low-resin content fiber reinforced polymers, Dr Caspe's bailiwick also includes other material classifications such as ceramic matrix composites, neat plastics, and adhesive

systems. Dr Caspe received his BS in Ceramic Engineering from Rutgers University and his PhD in Materials from the University of Manchester (UK). His dissertation focused on the chemistry and cure kinetics resulting from accelerated cure rates of carbon reinforced epoxy composites.

MEETING DETAILS

Place: Bridgewater Manor, Bridgewater, NJ; (908) 658-3000 Time: 5:45 – 8:30

Cost: \$10.00 Adv Registration; \$15.00 at Door; Students – Free This meeting is open to all SAMPE members, spouses, guests, and other interested parties

Reservations contact John Osterndorf at 973-248-5885 or at jfo0956@gmail.com by noon Wednesday before the meeting. Directions to Bridgewater Manor: From I-287 north, take exit 22A (206 south). Go thru two lights, Bridgewater Manor is on right. From I-287 south, take exit 22. Make right at end of ramp. Make next left, a jughandle to cross 202/206 to go south on 202/206. Go thru three lights, Bridgewater Manor is on the right

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2014 - 2015 Meeting Schedule

September 4, 2014 – Tom Farnan, Cimquest Inc.

October 2, 2014 – Russell Caspe, Gentex Corp

October 13 - 16, 2014 – CAMX, Orlando FL, sponsored jointly by SAMPE and ACMA

November 6, 2014 – John Busel, ACMA

December 4, 2014 – Joe Landolina, Suneris Co

February 5, 2015 – TBD

March 5, 2015 - TBD

April 2, 2015 – TBD

May 7, 2015 - TBD

May 17 -21, 2015 – SAMPE Tech, Baltimore MD

June 4, 2015 – TBD

July 2015 – 32nd NJ SAMPE Golf Tournament, Picatinny Arsenal



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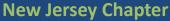
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