



### D24 The Vision and Progress of the Organization of Scientific Area Committees (OSAC) Fire Debris and Explosives (FD&E) Analysis Subcommittee

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**Learning Overview:** The goal of this presentation is to inform attendees of the progress being made within the OSAC as it relates to FD&E analysis.

**Impact on the Forensic Science Community:** This presentation will impact the forensic science community by educating laboratories of the progress being made by the OSAC FD&E Subcommittee. The recommendations coming from the OSAC will impact all analysts and laboratories that perform FD&E analysis.

The OSAC purpose is to strengthen the nation's use of forensic science; it was formed as a response to the 2009 National Academy of Science (NAS) Report *Strengthening Forensic Science in the United States: A Path Forward*.<sup>1</sup> OSAC is divided into five Scientific Area Committees (SAC) which are currently further divided into 25 subcommittees. The FD&E Analysis Subcommittee is one of those 25 subcommittees and is part of the Chemistry/Instrumental Analysis SAC.

The main goal of all 25 subcommittees is to write consensus-based standards to be used by their discipline that are fit for purpose and based upon sound scientific principles. All of these standards must go through a Standards Development Organization (SDO), and the American Society for Testing and Materials (ASTM) is the SDO that will be used by the FD&E subcommittee.<sup>2</sup> There are already eight ASTM standards that relate specifically to fire debris and two that relate to explosives (smokeless powders). Most of these existing standards need a little tweaking to firm up their base, but some need a major overhaul in order to address the concerns that will dominate the future of forensic science.

The overall schemes (road maps of documents) that are envisioned for both fire debris and explosives will be presented and discussed. The proposed documents will include sample screening, sample preparation, instrumental analysis, data interpretation, reporting, analyst training, Quality Assurance/Quality Control (QA/QC) requirements, and method validation. Luckily, we do have the existing ASTM standards, and the work that was done previously by the Technical/Scientific Working Group for Fire and Explosions Analysis (T/SWGFEX) to use as starting points.<sup>3</sup> How far are we now in this process, and how much farther do we need to go?

With fire debris, we are farther along in the process, mostly because of the legacy ASTM standards that already existed; some for more than 30 years. However, are there ways that we can make it better? Can we tighten up the criteria so there is more consistency from analyst to analyst, and laboratory to laboratory? An overview of the vision the FD&E subcommittee has for the instrumental analysis and interpretation of fire debris, as well as the possibilities for the future of fire debris analysis, will be discussed.

With explosives analysis, there is a lot of work to be done. There are no currently existing consensus standards on how to approach the analysis of explosives. There are both intact explosives and post-blast analyses to consider. The previous work of T/SWGFEX, when available, is being used as a starting point upon which to build.

#### Reference(s):

- <sup>1</sup> Harry Edwards, Constantine Gatsonis. *Strengthening Forensic Science in the United States: A Path Forward*., Washington D.C., National Academic Press, 2009, <http://books.nap.edu/catalog/12589.html>.
- <sup>2</sup> All ASTM standards are published by ASTM International, West Conshohocken, PA. Available via <https://www.astm.org>. Accessed 21 June 2018.
- <sup>3</sup> SWGFEX.org. Accessed 31 July 2018.

#### Fire Debris, Explosives, OSAC