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September 2012

Message from the President

ASTEE Membership,

As we pass the midway point of the 2012 calendar year the American Society of Trace Evidence Examiners is thriving. We have had two very successful social events, one at the AAFS meeting in Atlanta and the second at Inter-Micro in Chicago. ASTEE continues to give back to its membership by funding these events with support from its sponsors. We have one more major event planned this year, namely the Rope and Cordage Workshop, on which we partnered with NEAFS and the Maine State Police Crime Laboratory (the lead coordinator). Our membership answered the call and within just a few days ASTEE members filled most of the available spots. This training opportunity is a significant milestone for the organization. One of our primary goals for giving back to our membership has been the ability to offer ASTEE sponsored training. For this event we were able to cover the full registration cost of the workshop for our members. As the organization moves forward we hope to offer additional training opportunities to our members. We plan to announce some of our plans for the 2013 calendar year soon.

So what do I anticipate for the remainder of 2012? I plan to push development of a members only area on the website. This area will offer access to our membership contact list, professional development planning spreadsheets, and other resources. I am also planning the transition to our next president, Chris Bommarito. ASTEE is in good standing financially and continues to grow stronger as an organization. We continue to look for corporate sponsors, who provide the financial foundation for the opportunities that ASTEE can offer its members.

I once again reach out and encourage our members to become active in ASTEE. We are looking for individuals to volunteer to help our society on many of our committees. Our annual election is coming up and we have leadership roles available on our board of directors. Just six years ago, after spending much of my earlier career keeping to myself, focused on casework, a few friends pressed me to be more active in forensic science. As a result, I have become extremely active in the profession, on national workgroups, and even on international committees. These individuals are still my friends and I have made many more and numerous professional contacts. These last few years have by far been some of the best in my professional career. I cannot promote professional involvement enough; the satisfaction you will receive by being part of something so significant will be remarkable. I look forward to continued energy and new faces within ASTEE!

Regards,

Chris E. Taylor

President, ASTEE

ASTEE at a Glance

The past four months have been eventful for ASTEE. The recent Inter-Micro 2012 meeting held in Chicago was well attended by ASTEE members, many of whom contributed to the technical program. President Chris Taylor gave a presentation about ASTEE at the conference, and several attendees submitted membership applications. Thanks to efforts such as these, the membership continues to grow, and ASTEE continues to give back to its membership in a variety of ways. One of these is in the form of social events that are free to members. The most recent of these was the ASTEE social event held during the Inter-Micro 2012 meeting in Chicago, which was by all accounts a huge success. Nearly fifty people attended, making this the second largest social event hosted by ASTEE to date. The event was held at a venue on the south side of Chicago, on a rooftop deck right next to the “L”. A variety of activities were enjoyed by the members while they engaged in networking. I believe that the photos on pages 13-14 speak for themselves. These social events are a great opportunity to meet other ASTEE members and build relationships in the field. I strongly encourage members to take advantage of these opportunities whenever possible. I think that I speak for all of the ASTEE members who attended when I say thank you to Chris Taylor for making that memorable event happen. I would also like to take this occasion to thank our generous sponsors, CRAIC Technologies, Gateway Analytical, and Foster and Freeman, for making the event possible. Finally, thank you to Pete Diaczuk and Kim Mooney for their hard work documenting this event.

ASTEE Members Receive Member Benefits in the Form of Free Training

ASTEE is proud to announce that one of our original plans for the society to sponsor training for the Trace Evidence community has occurred. In partnership with the Northeast Association of Forensic Scientists (NEAFS) and the Maine Department of Public Safety Headquarters, a Forensic Examination of Rope and Cordage Course is being offered in Augusta, Maine from September 12 to 14, 2012. The three day event will include lecture, hands-on activities, and tours of rope and cordage manufacturing facilities. Members of ASTEE will receive complimentary registration. The ASTEE board of directors hopes that more events like this can occur in the near future. It is anticipated that ASTEE will provide more sponsorship in the future by organizing training events and offering its members benefits such as covering partial or full registration, or funding travel and attendance grants. Please be on the lookout for emails from ASTEE that communicate these opportunities to members. In addition, ASTEE welcomes suggestions from its membership related to training topics, venues, instructors, etc.

(Cont. on Page 3)

ASTEE at a Glance *(Cont. From Page 2)*

ASTEE Elections 2012

Elections for ASTEE board members will be conducted this Fall for 2013. The year 2013 promises to be another great year for ASTEE, and will include our major event and ASTEE business meeting to be held in conjunction with NIJ's Trace Evidence Symposium. The follow positions will be up for nominations and election:

President-Elect: [One year. After one year becomes president for one year (2014)]

Fulfills the president's duties should the president be absent, leave office or become incapacitated.

Treasurer: (2 year term)

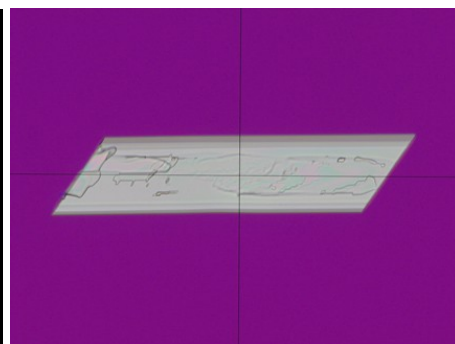
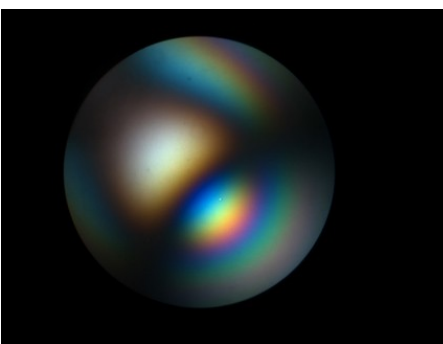
Keeps Society financial records, safeguards its funds, keeps the membership list current, notifies the membership chair of address changes, deposits all monies received by the Society in accounts approved by the Board, files the Society (Corporate) Annual Report, and submits the corporate renewal fee.

Director: (3 year term)

Act at the direction of the executive board (President, President-Elect, Treasurer, and Secretary) to carry out assigned tasks on behalf of the Society. Directors are voting members of the Board.

If you are interested or would like to nominate someone please contact Melissa Balogh at balogh.melissa@gw.njsp.org. Please identify which position(s) you are interested in and provide a copy of your resume and a photo of yourself for the electronic ballot. Nominations will be received until 30 Sept 2012 and then closed.

You can also see ASTEE's bylaws at www.ASTEEtrace.org for further information.



(Cont. on Page 4)

ASTEE at a Glance *(Cont. From Page 3)*

Letter from the JASTEE Editor

The Journal of the American Society of Trace Evidence Examiners (JASTEE) is in need of articles for our peer-reviewed journal in trace evidence. Our next issue will be published in the next month. If you have any research that you would like to consider for publication, please contact the ASTEE Journal Editor, Christopher Bommarito at bommarito@forsci.com. Please note the new email address. If you have submitted a draft or other communication to bommaric@michigan.gov and have not received a response, please resubmit to bommarito@forsci.com. Some advantages to publishing in JASTEE are a quick turnaround time in the review and publishing process, free open source online access to the journal and a target audience of trace evidence examiners who receive the journal. Another benefit of the on-line format is the ability to include unlimited color images in your paper at no additional cost.

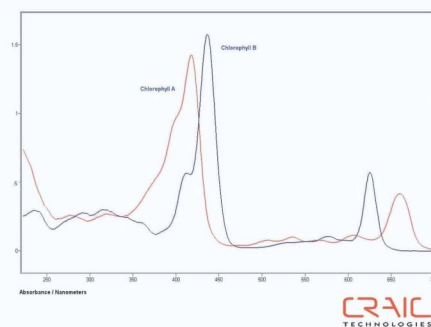
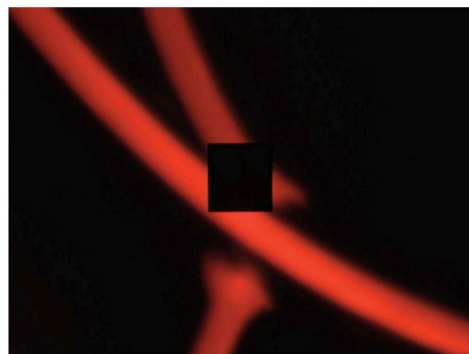
Thank you,

Christopher Bommarito
Editor, JASTEE

Scientific Working Group on Geologic Materials—SWGGE0

The Scientific Working Group on Geological Materials (SWGGE0) held its first meeting in Atlanta, Georgia from June 26-28, 2012. The meeting was hosted by RTI International's Forensic Technology Center of Excellence-Center for Forensic Sciences of Raleigh, NC, and also sponsored by the Department of Defense-Defense Forensics and US Army Criminal Investigation Laboratory. The fourteen member working group is comprised of federal, state, local, private, academic, and international forensic science and geology practitioners and will provide consensus standards for use by forensic science service providers. Many of the members are also members of ASTEE. The new working group is funded for two years and will meet biannually to accomplish its goals. The initial efforts are to develop standard guides in collection, forensic analysis for the comparison of soils, and the forensic analysis of soils and geological materials for geo-sourcing and intelligence. Work products and other resources will be available on a future website and will be an open resource.

(Cont. on Page 6)



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TECHNOLOGIES

ASTEE at a Glance *(Cont. From Page 4)*

ASTEE joins MAFS, SAFS and others for a Joint Regional Forensic Science Meeting in 2014

The fall 2014 MAFS meeting will be held in Minnesota and will be hosted by the Minnesota Bureau of Criminal Apprehension Forensic Science Laboratory, along with other laboratories in the area. The last joint meeting was held in 2009 in Orlando, Florida; that meeting was a huge success with over 400 registrants, 35 vendors, and 21 workshops. We have every reason to believe that this coming joint meeting will be an even bigger success, especially if we can encourage the ASTEE membership to turn out in large numbers and contribute to the technical program and social events associated with this meeting. To that end, ASTEE president Chris Taylor has been working with MAFS president, Todd Welch, and the local arrangements and program chair to make this partnership happen. ASTEE extends a sincere “thank you” to MAFS for the invitation. The membership of ASTEE certainly has an opportunity to impact the success of this joint meeting by offering workshops and giving presentations specific to trace evidence and trace material analysis. This looks to be another significant and exciting event for ASTEE and offers a tremendous opportunity to the trace evidence community to benefit from back-to-back major trace evidence meetings with the Trace Evidence Symposium in 2013 followed by this joint meeting the following year. Although we are almost two years out from this joint meeting, it is never too early to think about how a strong presence by ASTEE could influence the workshops that could be conducted and the research that could be presented. The meeting will be held October 5th through the 10th 2014 at the Crowne Plaza St. Paul-Riverfront Hotel which is close to the Minneapolis-St. Paul International Airport. Mark your calendars and start thinking about how you could contribute to the program.

News from the Education Committee

We want to thank the membership for filling out the 2012 survey on training needs in our community. We are currently going through the results and hope to be able to provide some of the training requests in the future. More details will follow in the next newsletter. As our membership is spread throughout a wide geographic area, we hope to provide training opportunities in several different regions over the coming years as many members expressed that location was a big factor in whether or not you could receive training. This year, ASTEE funded 11 members to attend the rope and cordage workshop hosted by the Cordage Institute and NEAFS in Maine. For 2013 we are working on hosting a hands on workshop in DC during the week of the American Academy Meeting. If you have training needs please contact the education committee and if there are members within a geographic region who can provide a location for a workshop, ASTEE may be able to fund the trainer to come to you as opposed to ASTEE funding several members workshop fees.

Sandra Koch
Education Committee Chair

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Fun in the Lab:

Raman Microspectroscopy of Plastic Explosives

Dr. Paul Martin*

This is part of an infrequent series of the results from fun but relevant experiments written for the ASTEE newsletter.

The identification of plastic explosives has become a critical aspect of both homeland security and military operations. Identification, especially of post-blast residue, can be very challenging as there may only be trace amounts of the plastic explosives available for analysis. Additionally, explosives are designed to undergo exothermic reactions with the application of energy. Since spectroscopic techniques used to analyze trace evidence require electromagnetic energy to be focused onto a microscopic area, the energy density is high and can lead to exothermic reactions in the sample. Fortunately, the plasticizers in plastic explosives tend to burn rather than undergo a more energetic reaction. The purpose of this paper is to show results from the spectroscopic analysis of some plastic explosive samples as well as to discuss the techniques used to acquire these spectra.

Plastic explosives are a specialized type of material in that they can be easily molded and shaped. As such they have many uses in demolition and in warfare. They have become also a favorite material in improvised explosive devices. They consist of a variety of complex mixtures containing various forms of explosive materials, plasticizer, plastic binder, colorants and various types of taggants. As such complex mixtures, their Raman spectra can be quite complex which can make identification very exact.

Raman spectroscopy is a useful technique to positively identify samples of explosives by acquiring vibrational spectra from the Raman scattering when illuminated by monochromatic light from a laser. The vibrations of the chemical bonds within the molecules can yield a complex spectrum that will act as a "fingerprint" so that the sample may be positively identified. Raman microspectroscopy has a number



Figure 1. (CRAIC Apollo™ Raman microspectrometer attached to a microscope

of advantages over infrared microspectroscopy including that the intensity of spectral features are in direct proportion to their concentration of that species, Raman spectroscopy can be used to analyze aqueous solutions and compounds as water is a non-Raman active material, the technique requires little or no sample preparation and Raman spectra are generally found to be insensitive to temperature changes.

In this paper, we examine four samples of different plastic explosives with a CRAIC Apollo™ Raman microspectrometer from CRAIC Technologies. Three of the samples were perfectly amenable to spectroscopic analysis while the fourth

demonstrated the difficulties of the examination of minute amounts of sensitive exothermic materials. This paper discusses some of the special sampling requirements needed for some of the more reactive samples that are often encountered in casework.

The CRAIC Apollo™ instrument used for these experiments was equipped with a 100 mW laser with a stabilized output at 785 nm. The laser is mounted on an optical interface directly attached to an optical microscope. The microscope was used with a 20x objective and yielding a sampling area 14 microns in diameter. The Raman spectrometer was configured to measure from 250 to 2000 cm^{-1} and in each case 25 spectra were averaged with each spectrum being acquired in 1 second.

Raman Microspectral Measurements:

Four different types of unknown plastic explosives were analyzed. White, cream, orange and dark green colored samples were all analyzed. Sample preparation was simple: small amounts were placed directly upon a microscope slide where they adhered. The samples were placed under the microscope and the microscope was Kohler illuminated with incident, white light illumination. The white light was shuttered and the laser was used to illuminate the sample. A spectrum was acquired and then the laser was shuttered as well.

The amount of time of sample illumination was done in order to prevent photochemistry from occurring. A laser focused through a microscope to a 14 micron spot yields a very high energy density over a small area. It is therefore necessary to minimize the amount of time and energy to which these samples are exposed in order to prevent an exothermic reaction. Spectra were acquired from three of the samples with ease and in less than 30 seconds. These are shown in Figures 2-5.

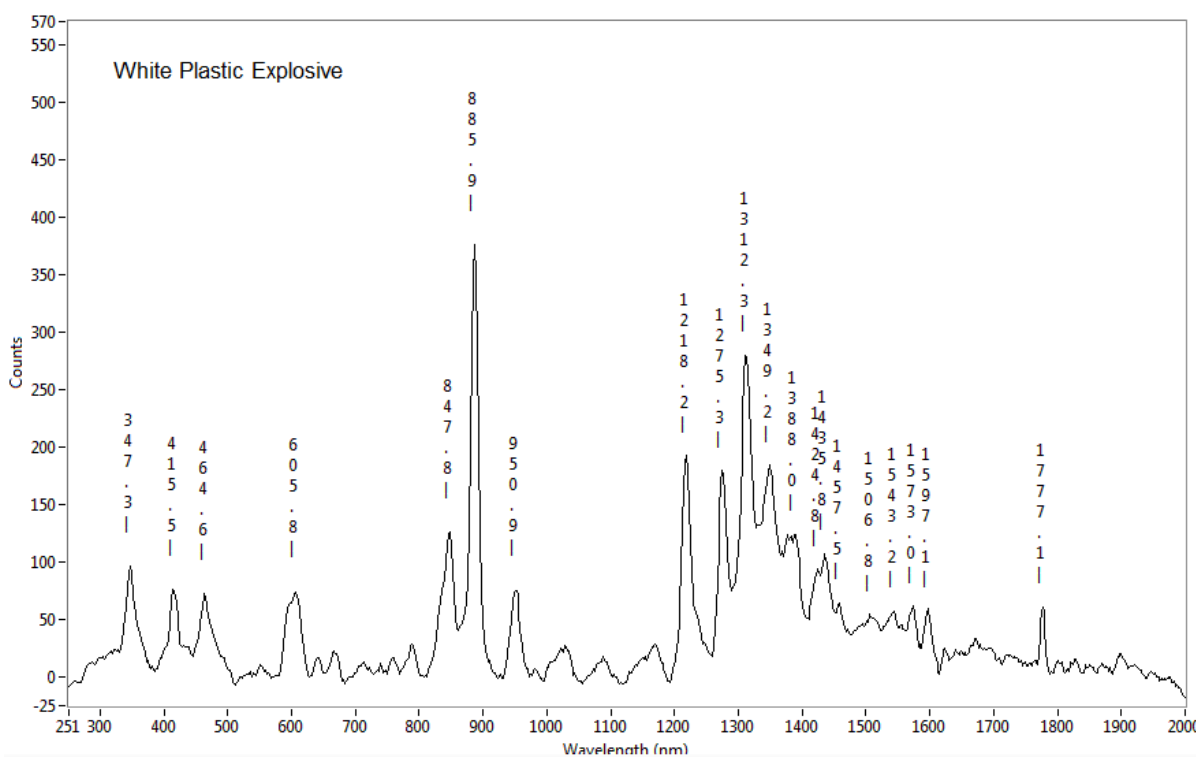


Figure 2 Raman spectrum of white plastic explosive.

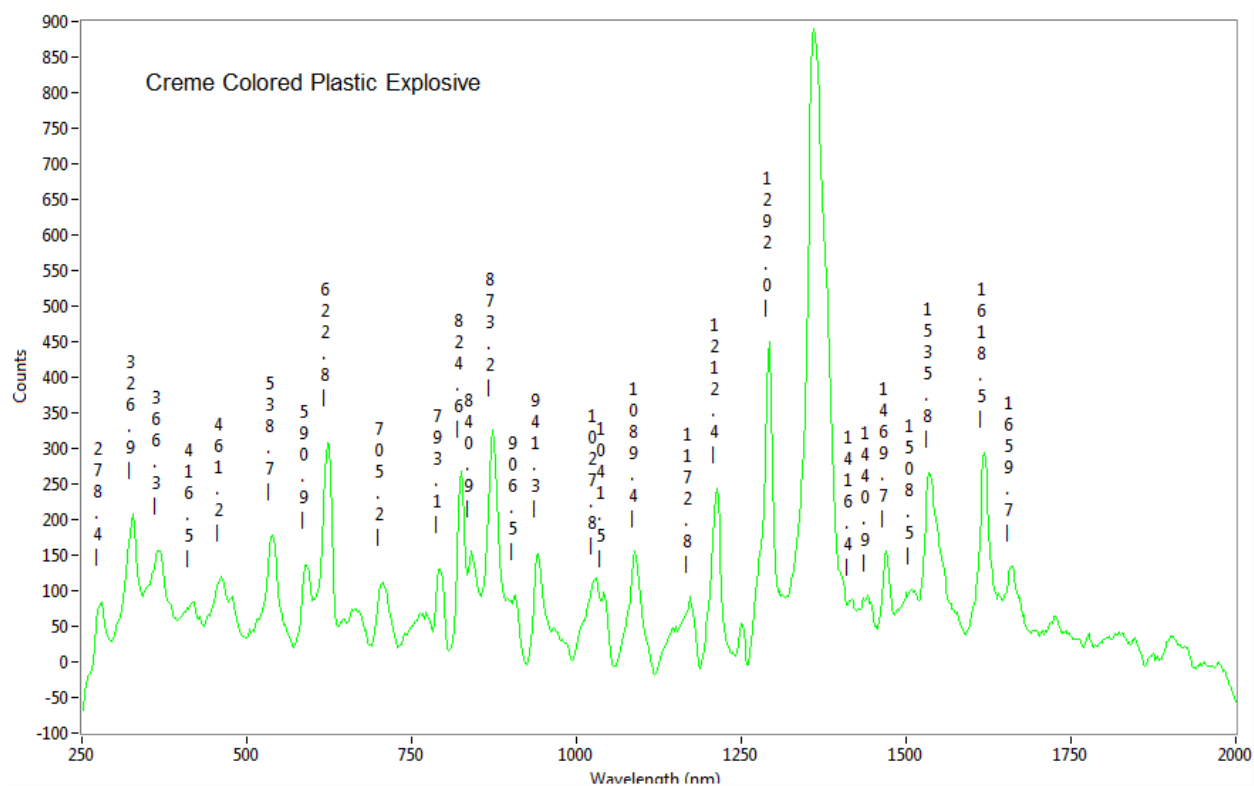


Figure 3 Raman spectrum of crème colored plastic explosive.

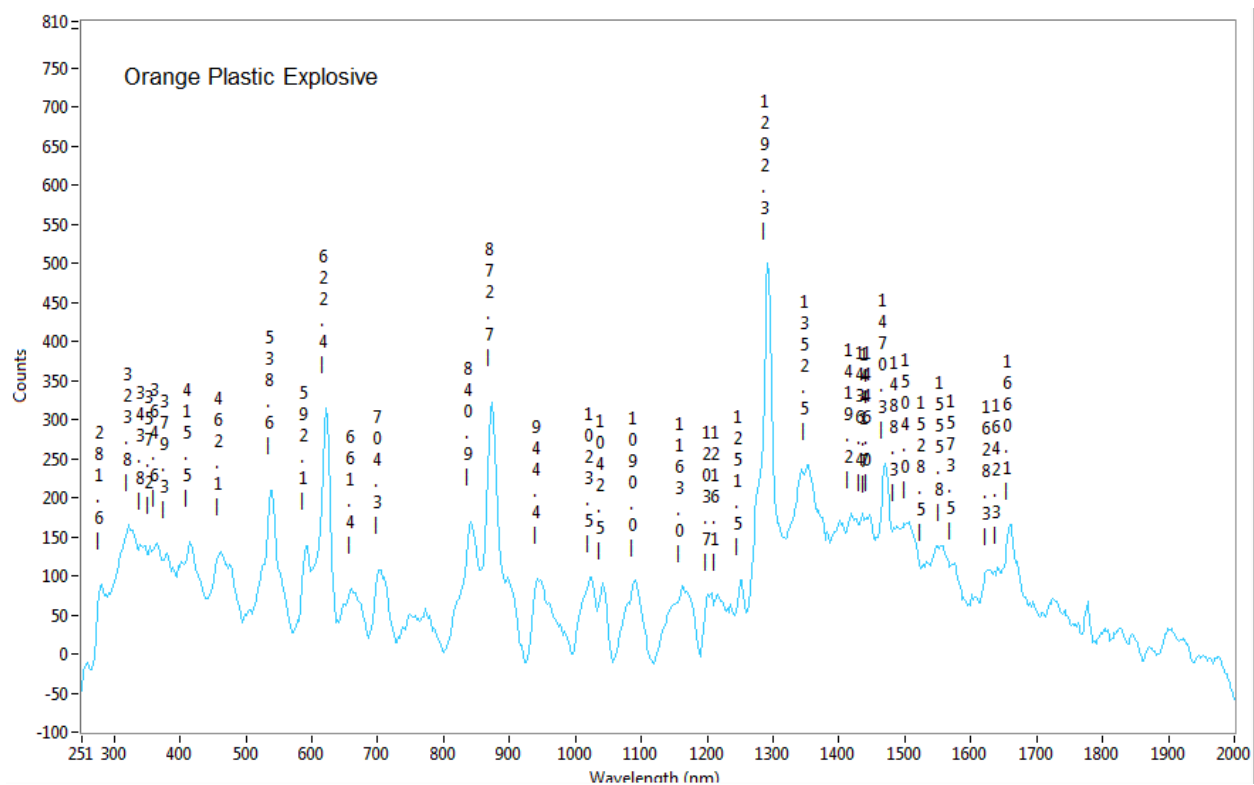


Figure 4 Raman spectrum of orange plastic explosive.

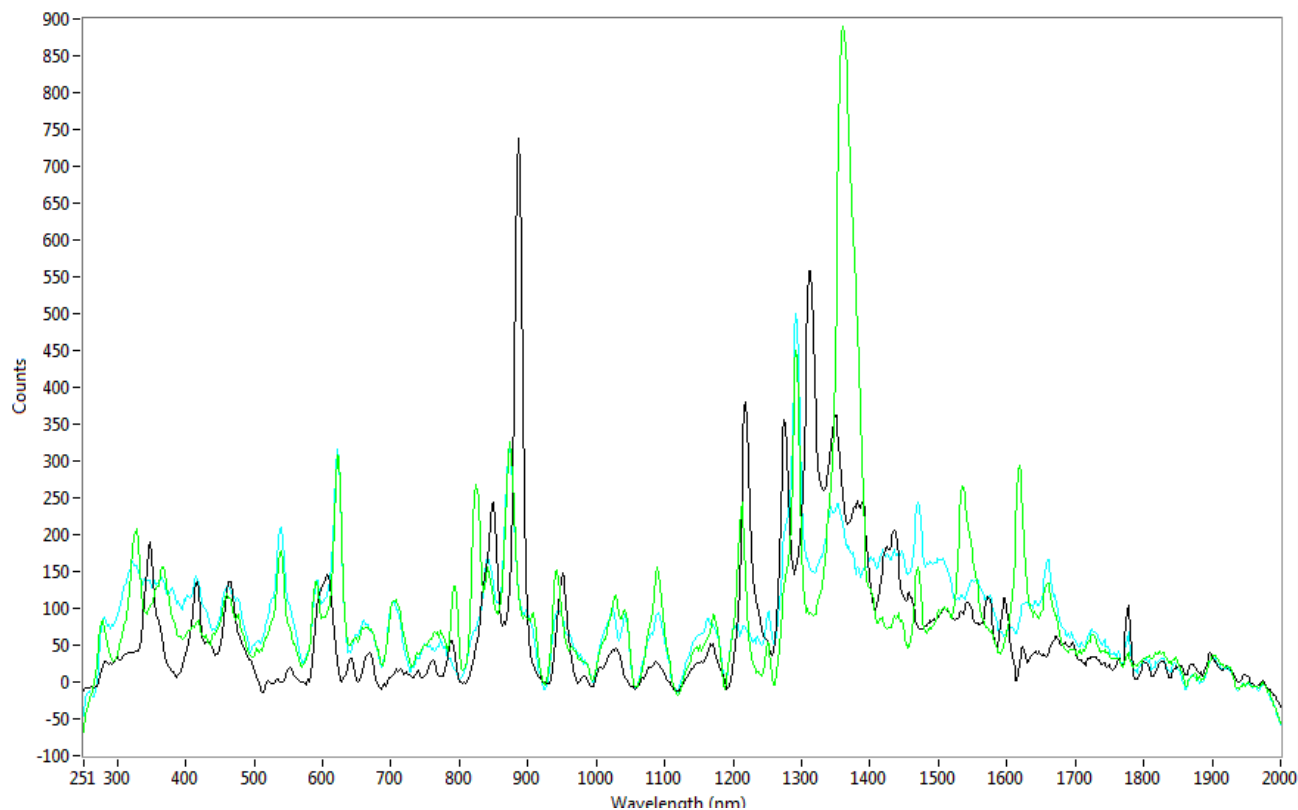


Figure 5 Overlay of Raman microspectra of all three samples.

The fourth sample, a dark green plastic explosive, did present problems. The first experiment was done with the full 100 mW laser power. Immediately there was a flash, a puff of smoke and a black spot appeared on the sample. And the microscope objective required cleaning. The easiest solution for this type of result is to reduce the laser power. The power was reduced several times but with the same end result of the sample igniting. Spectra were not obtained from this sample.

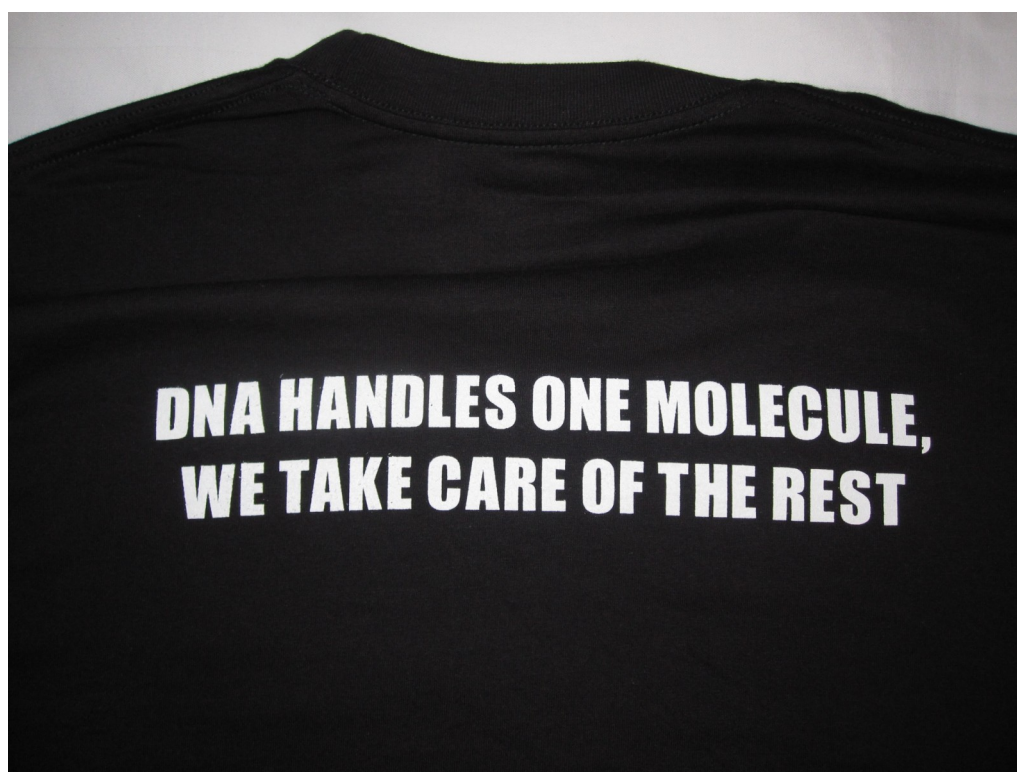
Results:

Raman microscale spectra of three different unknown plastic explosives were acquired. Of the three samples, Raman spectra of 14x14 micron sampling areas were acquired in less than 30 seconds per sample. There was minimal fluorescence background and this was removed by an automated baseline correction algorithm. No other post sampling processing was needed.

Plastic explosives, such as those analyzed in this paper, are complex mixtures of explosive materials, plasticizers, binders and taggants (including colorants). As such they yield complex Raman spectra which can make their identification quite simple. This data can either be compared with libraries or the spectra may be analyzed to determine each functional group in the sample and therefore determine exactly what type of explosive has been recovered. Such complex spectra, as shown in the overlay in Figure 5, can also be easily differentiated by Raman spectroscopy due to their high level of detail. For example, the white plastic explosive has many of the characteristics of RDX including the strong doublet peak at 886 cm^{-1} . RDX is a major component of Composition 4, a common military plastic explosive.

The fourth sample of plastic explosive, colored dark green, proved to be difficult to analyze. Every time it was exposed to the laser, it ignited and the optics of the objective required cleaning. The usual solution to such samples would be to reduce the laser power and the increase the sampling time of the Raman spectrometer. However, this did not stop this particular sample from igniting for the power levels that were attempted. The next most common steps would be to dissolve the plastic explosive in solution or to cool it with a Cryostat type device to liquid nitrogen temperatures. Obviously, the latter is not practical as most laboratories do not have such devices. Dissolving the samples would be the most practical solution but this may also cause changes in the Raman spectra due to the phase change and interaction with the solvent.

In summary, care is required when analyzing plastic explosives. While plastic explosives are *explosively* inert under most conditions, requiring detonators to actually explode, they will ignite and burn. It is suggested that initial experiments as to the stability of these materials be done by illuminating the samples with the laser while using an inexpensive microscope objective. If the sample does not ignite, then proceed to acquire the Raman spectrum. If the sample does ignite, change your shorts, clean your objective and reduce the laser intensity to the point where the sample does not ignite if possible.



Inter-Micro 2012 Meeting



Inter-Micro 2012 Meeting



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Some Thoughts on Contextual Bias

When ASTEE made the mistake of asking me to edit the newsletter, they didn't realize that I was going to view it as an invitation to share unsolicited opinions with the membership. However, that is exactly what I intend to do in this edition of the newsletter (and, depending on how this goes, perhaps in future editions as well). In this edition I have tried to share some of my opinions on contextual bias, a topic that I began thinking about after hearing a discussion of contextual bias that took place during a panel session at the 2011 Trace Evidence Symposium. The session can be seen online at <http://projects.nfstc.org/trace/2011/agenda.htm> under the agenda item "Debating the Merits of Trace Evidence Analysis and Interpretation". The relevant discussion begins around 31 minutes into the video, and continues (with a few other topics mixed in) for much of the remaining panel session.

I am going to first discuss my understanding of contextual bias (both what it is and what it is not). I will then share my opinions about how I think the trace evidence community should deal with this problem. I suspect that not all of the readers will agree with my viewpoint. If that is the case, or if you simply have a comment to share, I would strongly encourage readers to send me a letter to the editor (andybowenva@hotmail.com). I intend to include any such letters in the next newsletter, along with a response, provided they are civil. I feel like the trace evidence community would benefit from a broader discussion on this topic, ideally discussion that eventually leads to some consensus.

As I understand it, contextual bias is essentially a flaw of the human mind. Try as we may, when we are posed a question or faced with a problem to solve, our brains are unable to separate the question or problem from its context. Researchers can demonstrate that this phenomenon exists by asking human subjects the same question, but placed in different contexts, and then observing that humans tend to give different answers to the question depending on the context. There is a strong body of evidence supporting the hypothesis that this phenomenon exists. This feature of the human mind is probably an advantageous trait to have in most circumstances. After all, most problems are easier to solve when we can understand their context. However, trace evidence examiners are asked very precise questions (such as whether two fiber samples could have shared a common source), and the conclusion we draw should be based upon the results of our scientific analysis of the evidence, and should not require (or be influenced by) contextual information *that is not relevant* to the examination at hand. I put a portion of the preceding sentence in italics, because it is my impression that this small piece of language is where the vast majority of the confusion (and therefore disagreement) over contextual bias comes from. Let me give an example related to trace evidence to help explain what I mean here. If you make it through the example, you will realize that while it is somewhat far-fetched, it is not outside the realm of possibility. In any event, I hope that it serves to illustrate my point.

Let us consider a fictional murder as our example. Let's imagine that during our pretend murder, several fibers from the shirt of the murderer are transferred to the victim, and the victim is subsequently dumped in the desert. The body is discovered several months later and the victim's clothing is sent to a crime laboratory with a request for forensic fiber analysis. A shirt recovered from the house of a suspect, bearing faint reddish-brown stains, is submitted for comparison to any foreign fibers that might be recovered from the victim's clothes. When performing a fiber comparison, there is certain contextual information that trace evidence examiners consider invaluable for interpreting data and forming conclu-

sions. In this imaginary crime, knowing that questioned fibers were exposed to bright sunlight for several months would be important contextual information that would help us assess the significance of any slight color differences that might exist between questioned fibers and a known fiber source. Information like this that is directly relevant to our conclusions, and indeed necessary for us to correctly interpret our scientific results, is called *domain relevant* information. The pushback that I observed at the trace evidence symposium largely consisted of forensic scientists who seemed concerned that vital information like this might be withheld from them if sequential unmasking (see below) or another protection against context bias were in place. However, my impression is that no one is suggesting that domain relevant information should be withheld from trace evidence examiners. Let's continue with our example to illustrate what *non domain relevant* information is and why I believe we should be worried about it. Let us say that the suspect's shirt went to the DNA section of the lab first, and that their report was already completed prior to the shirt being transferred to the trace evidence section. Imagine that the DNA section had determined that there was human blood on the shirt, and the blood contained DNA consistent with that of the victim. Placed in this context, the fiber examiner would now have strong reason to believe that the questioned fibers from the victim were going to match the fibers from the suspect's shirt. The problem here is that this opinion has been formed without any consideration of the fiber evidence itself, and it has the potential to influence future interpretations in the case. If the examiner observes microscopical (or chemical) similarities between the two fibers, they might think, albeit subconsciously, "Aha - I knew these fibers were going to match the second I saw those DNA results". If there are small differences between the two fibers, the examiner might deem those differences to be "not significant" or "explainable" more easily that they would without the DNA information in the back of their mind. As human beings, we are simply not very good (indeed nearly incapable) of separating the problem (do these fibers match?) from the context (the victim's blood is all over the shirt, so logically the fibers should match). This is a subconscious process, and even the most ethical scientists are susceptible to this type of influence. Now let me conclude our imaginary crime by filling in a few details. The suspect owns two shirts composed of similar, but slightly different, fibers. After the crime, the suspect placed the shirt worn during commission of the crime in his dirty laundry, and blood transferred to this second, similar shirt in the process. The suspect later decided to dispose of the shirt he had been wearing during the murder, and burned it. The police recovered the second shirt from the suspect's house after observing what appeared to be faded blood stains. Therefore in our imaginary scenario the known shirt submitted to the lab did have the victim's blood on it, but it was not the source of questioned fibers recovered from the victim. For argument's sake, let us agree that the differences between the questioned and known fibers (while relatively subtle), were significant enough that the fiber examiner would have eliminated the known shirt if they had not been privy to the DNA results.

In this imaginary case there was no problem with the laboratory or the way it handled the case that would currently raise alarm by an audit. Indeed, the fictional examiner was well-trained and knowledgeable, they followed their procedures, their procedures were scientifically sound, and the examiner was ethical; there was no problem at all except for the contextual bias and the fact that the examiner got the answer wrong. Without a narrator to tell you the "true" scenario, no one would ever imagine that something went wrong in this case. I had to use a fictional scenario because in the real world there is no narrator to tell us when we get it "right" and when we get it "wrong". The only opportunities we have for that are in training, from proficiency tests, and during research. At least one research study illustrated fairly dramatically the potential for context bias to influence forensic scientists in a way that

increased their chances of getting the answer wrong. In this frequently cited study (Dror et al. 2006), a number of latent print examiners were provided with fingerprint evidence that they had (unbeknownst to them) examined earlier in their career during actual casework. The evidence was resubmitted to them under the guise of being new casework, and was accompanied by non domain relevant information that was potentially biasing (e.g, that the suspect had confessed to the crime, or that the suspect had been incarcerated during the time of the crime). In a small but significant number of these resubmitted cases, the examiners changed their original finding (from a fingerprint association to an exclusion, or vice versa). This research provides powerful evidence that contextual bias has the potential to negatively impact forensic examinations if we do not protect ourselves from it.

I hope that I have convinced you that the phenomenon of contextual bias is real, and that it poses a potential problem to the trace evidence community. If not, I suggest reading some of the references on context bias and then deciding for yourself what you think. For anyone who agrees that this is a potential problem, the next logical question to ask is, “what do we do about it?” Thankfully for us, some very smart people have already thought about this and have proposed some ideas. The most commonly encountered proposal is called “sequential unmasking”. This concept essentially involves a middle-man who reviews the case file prior to passing it on to the fiber examiner (or any forensic scientist), and removes (temporarily) any potentially biasing non domain relevant information. In our imaginary case above, this middle-man would have removed the results of the DNA examination (being non-domain relevant and potentially biasing) prior to transferring the clothing to the trace evidence unit, and the fiber examination would have been evaluated entirely on its own merits.

I think that many forensic scientists are (rightfully) wary of this concept for well-intentioned, if misplaced, reasons, and I certainly understand. Like them, I generally would like to have as much information as possible regarding the history of evidence that I am examining, and understanding its relationship to the entire case makes my communications with my customer more relevant and therefore more useful for them. However, the only reason that I want this information is because I believe that it helps me get the right answer for my customer. I assume that every single trace evidence examiner would also agree that their primary goal in the examination of any evidence is to get the right answer. If we can accept that as a fact, then we have to ask ourselves this following question: “if there is strong scientific evidence that certain types of information make us less likely to get the right answer, why would we want to be provided with that information?” I imagine that none of us would want to be given any information that makes us more likely to get the wrong answer.

During conversations that I have had with a number of different trace evidence examiners, both at work and at conferences, we have generally been able to agree on that last point. If as a community we come to the consensus that context bias exists and that we should be protecting ourselves from non domain relevant information, the next set of questions we face are a little bit trickier. First off, we need to define what type of information is domain relevant, and what type of information is not. I feel it is more efficient to define non domain relevant information, since it seems to me that the vast amount of information that could potentially be shared is domain relevant, and therefore so many examples exist that it would not be efficient to consider them all. In my opinion, non domain relevant information is information that is unrelated to the evidence being examined, but gives the examiner a strong reason to believe in either the guilt or innocence of the suspect. This type of information does not assist the examiner in

interpreting their results (being unrelated to their evidence), but suggests to the examiner what they might expect to find upon examining the evidence (either an association or an exclusion). Examples of this type of information include information regarding confessions, eye-witness identifications, the suspect's criminal record, alibis provided, results of other examinations performed related to the case, etc. None of this information (with the possible exception, occasionally, of other examinations conducted), helps us accurately interpret our analytical results. After all, even if the police have the right suspect, we might not have matching Q and K fibers, or any other type of trace evidence, for a variety of reasons unknown to us. Cases will undoubtedly arise with unforeseen circumstances that might make us re-think our definitions of domain relevant and non domain relevant information, but that is okay. Science is all about changing our opinions over time as we make more and more observations about the world we live in. However, to me this seems like a reasonable place to start in terms of defining non domain relevant information.

The final question we must then ask ourselves is who should be the "gate-keeper" of this type of information. My opinion is that whenever two trace evidence examiners are available in a laboratory, it makes sense for one to look through the case file prior to handing it over to the examiner. Ideally this should be the examiner who will later perform the technical review of the case. I suspect that in the vast majority of cases, no potentially biasing information will be present, and nothing will need to be done. In the small number of cases in which some non domain relevant information is seen to be present, it could be temporarily removed from the case file and returned at a later point in the process (but at a minimum after the initial report is written).

I realize that this is a fairly lengthy editorial, but if you took the time to read it, I hope that I convinced you that as a community we would benefit from having some discussions related to contextual bias that lead to some consensus. I feel strongly that the community would benefit from a discussion of this type, and as a result I encourage anyone who disagrees with me, or has anything to add, to send me an email as a means of continuing this discussion. It would be great if the ASTEE newsletter could help to disseminate a broad range of opinions and ideas on this topic to its members, so that we can all form our own informed opinions and continue this discussion.

References

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