ASTEE
American Society of Trace Evidence Examiners
April 2012

ASTEE at a Glance

Dear fellow ASTEE members,

It has been a very busy time for the organization since the last newsletter reached you. One of several changes is that the newsletter will now be edited by Andy Bowen. The new officers and various committee members have been hard at work behind the scenes on a number of important issues. We had a very successful social event on February 23rd in Atlanta during the AAFS annual meeting, and have yet another planned for this July in Chicago. The AAFS dinner was well attended and those members who were able to make it to Max Lager's Brewery were treated to a delicious spread and some excellent beers. We should all thank Jeff Dake and Chris Taylor from USACIL for their hard work putting this event together. We 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. As usual, Pete Diaczuk was gracious enough to serve as our unofficial photographer at the event (please see his photos on pages 12-13).

ASTEE plans to hold periodic social events in conjunction with regional meetings in the summer or fall in the alternate years of the Trace Evidence Symposium. Hosting these events, with the support of our valuable sponsors, allows ASTEE to reach our members throughout the country. We all face limited training budgets and heavy caseloads, but these are tremendous opportunities to learn from others in the field, share your knowledge with your peers, and get to know your fellow ASTEE members. We strongly encourage you all to make every effort to attend these invaluable events.

The editor of the ASTEE journal, Chris Bommarito, is hard at work on the next edition of the journal with help from his editorial staff. If you presented at the 2011 Trace Evidence Symposium or have anything that might be of value to the trace evidence community, please consider submitting it to the ASTEE journal. Everyone in the field benefits when we share our knowledge and ideas with each other.

(*Cont. on Page 2)*

ASTEE at a Glance *(Cont. From Page 1)*

Inter/Micro 2012 with ASTEE Social Event

It is our pleasure to announce that ASTEE will host its next social event in conjunction with Inter/Micro 2012 on Tuesday, July 10, 2012 from 6:30 to 9:30 PM. Chicago is a great place to support our membership in the Midwest and we hope you can make it to Inter/Micro meeting and join us for this event. ASTEE President Chris Taylor has reserved space at a roof top bar, Reggies Rock Café, on the south side of Chicago. Along with its award winning barbeque, wings, and beverage selection, Reggies offers live rock music. We also encourage our membership to support Inter/Micro with presentations. Wednesday is devoted to forensic science and trace materials. If interested, Inter/Micro's abstract submission process can be found at http://www.mcri.org/home/section/101-759/inter-micro-2012. The abstract submission deadline was just extended until **May 15th**, so get your paper in soon. More details will follow and we will send out a solicitation to members to see how many will attend. This will be a great opportunity to meet a variety of microscopists that not only examine forensic trace evidence, but diverse types of trace materials as well. Inter/Micro conference is a more intimate event than many of the other professional meetings, making it one of the best places for meeting other scientists and building professional relationships. The workshop this year will be taught by one of the pre-eminent optical mineralogists in the world, Dr. Mickey Gunter. We hope to see you there.

Trace Evidence Symposium 2013

The National Institute of Justice's (NIJ) new Forensic Science Technology Center of Excellence, Research Triangle Institute International (RTI), has begun planning the 2013 Trace Evidence Symposium. RTI was awarded a grant from NIJ to form the new Forensic Science Technology Center of Excellence and support forensic science service providers and the forensic science community with events like the Trace Evidence Symposium. They are looking at early August as the time frame, and actively searching for potential sites. It is wonderful that NIJ continues to support forensic science and the trace evidence community. Check the NIJ and ASTEE websites and watch for updates in the ASTEE newsletter (for more information and future announcements for abstracts for papers, posters, and workshops).

(*Cont. Page 4)*

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

2012 ASTEE Awards Recipients

It is only appropriate that we recognize all of the hard work that Vincent Desiderio put in over the past several years as the founding president of ASTEE. Those of you who were able to join us for the ASTEE dinner during the AAFS meeting had an opportunity to thank Vinny in person. The incoming president, Chris Taylor, honored Vinny with a well-deserved token of appreciation in the form of a beautiful crystal microscope. At the same dinner, Thomas Hopen was presented with the second annual Edmond Locard Award for Excellence in Trace Evidence. Those of us who know Thom have shared similar experiences of his tremendous generosity with his time and expertise. His willingness to share his vast knowledge with so many others in the field of trace evidence made him a perfect recipient for this prestigious award. We would also like to congratulate Cady Lancaster for receiving the 2012 ASTEE Scholarship Award. She certainly appears to have a bright future in forensic science.

Volunteers Needed

While Vinny's leadership will be missed, ASTEE is in good hands and is moving forward with the new officers as introduced in the last newsletter. However, despite our very capable leaders, ASTEE is an ambitious organization and in order to accomplish all our goals volunteers are needed. Specific needs that ASTEE is looking to meet include the following: one individual that may know about the tax exempt process or is willing to learn how ASTEE can complete this process; one volunteer to work with two other members to help complete the Trace 101 project for the website; and two volunteers to help compile a list of trace evidence resource links and suggest a user friendly layout with search features using these sources. We strongly encourage anyone who is interested in donating their time to contact the ASTEE President, Chris Taylor. Many thanks to the ASTEE members who have already agreed to donate their time and knowledge to further the goals of the organization.

ASTEE Training Survey

The education committee has put together a survey on the training needs of the membership. Please think about what training you think would be beneficial to our membership that is not already offered by another organization. If you have not completed the survey, you can access it at: http://www.surveybuilder.com/s/JSbOfx44YAA. The education committee will compile the results and utilize the suggestions to provide ASTEE sponsored training events in the future.

If you are interested in helping to teach a workshop please contact the education committee chair (Sandra Koch). Additionally, the committee is working to assemble a list of training resources and courses currently available to examiners. This list will be added to a members-only portion of the website.

Congratulations to

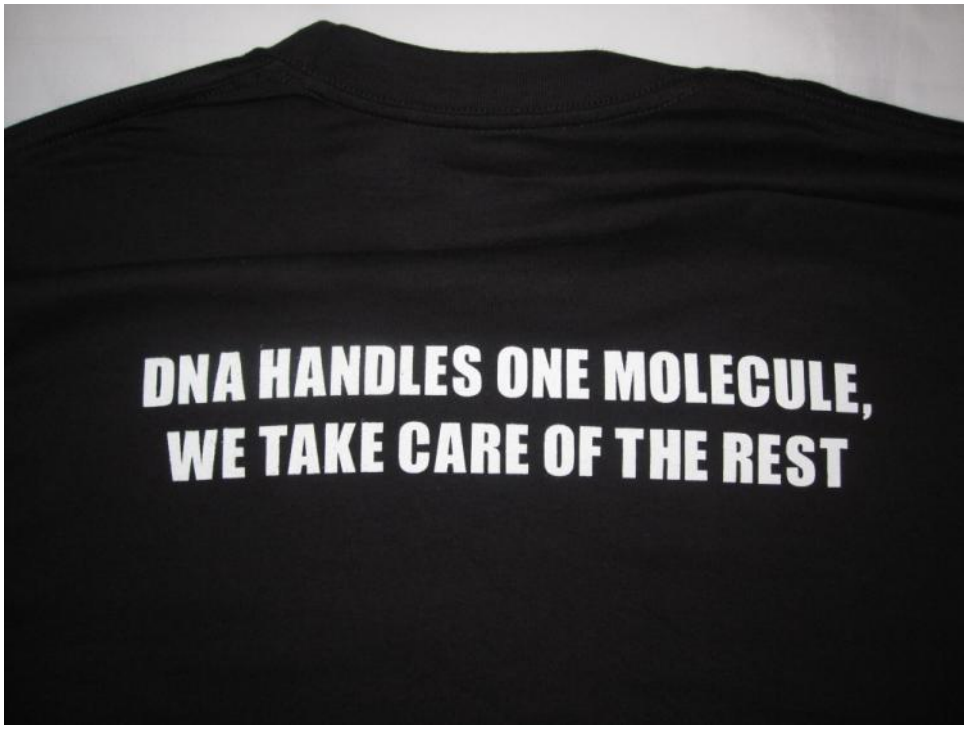
Thom Hopen

on his receipt of the 2012 Edmond Locard Award for Excellence in Trace Evidence

Congratulations to

Cady Lancaster

on her receipt of the 2012 ASTEE Scholarship Award



Tricks of the Trade

Using the Backing from Labels as a Tape Substrate

Thomas J. Hopen*

I have written a number of "Tricks of the Trade" articles over the years and several of them were based on ideas from other individuals that were so good I felt the need to pass them on to other examiners. Again this is one such article and I have to give credit to Forensic Scientist Chris Bommarito, Forensic Testing Services, for making me aware of using the backing from peel-off labels as a substrate when preserving tape samples. Routinely, I need to preserve a section of tape before fingerprinting or for my reference collection. Traditionally, I have used heavy duty sheet protectors made of polypropylene or sometimes a glass slide as substrates for the preservation of tapes. When I had enough sample, I placed a second piece of tape on top of the first piece that had been placed on a substrate. However, after a period of time some tapes were difficult to remove intact from the substrate, or from the first piece of tape, for examination and analysis. I have found this to be especially true for some duct and strapping (filament) tapes. On the other hand, the use of the paper backing on labels (which is normally discarded once the label is removed) seems to be a great substrate to put tapes on for easy removal, examination, and analysis at a later date. The paper backing is coated with a thin layer of silicone that aids in the removal of the label and, in our case, the removal of an intact piece of tape (Figure 1). I have tried the backing on FedEx®, USPS, and Avery® address labels and, so far, all have worked equally well. Thus far, I have not had any problems removing the tape from the backing at a later date, or any interaction between the tape adhesive and the backing that would cause a chemical alteration of the tape adhesive, but both aspects are still under investigation. However, they may not be suitable for use with silicone adhesive tapes. Some of you may already use label backings for a tape substrate and it would be interesting to hear any pros and cons you have encountered with this technique. Ask the people who do the shipping in your laboratory to start saving the backing of labels for you. Think of it as recycling since the label backings are not being discarded in the trash.

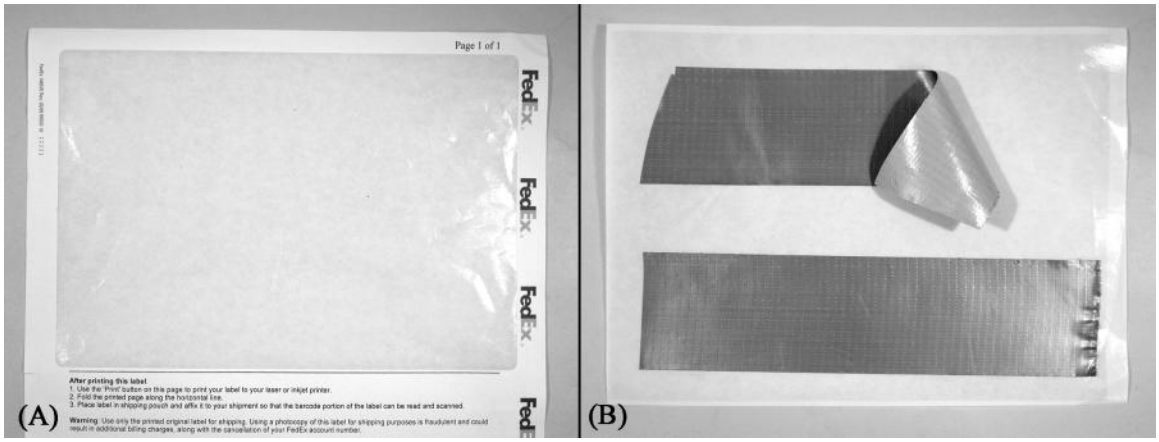


Figure 1. (A) The exposed backing after the FedEx® address label has been removed, and (B) the same backing bearing pieces of duct tape after the surrounding paper border has been removed. Note how easily the tape peels off.

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Absorbance Microspectroscopy of Colored Electrical Tape used in Improvised Explosive Devices

Dr. Jim Thorne*

Introduction

An improvised explosive device (IED) is the formal name for explosive devices, often used in unconventional warfare by guerrillas or commando forces in a theater of operations. An IED typically consists of an explosive charge, a detonator and an initiation system. IEDs are extremely diverse in design, and may contain many types of initiators, detonators, and explosive loads.

A common element to many IEDs is the use of colored electrical tape to organize the electrical wiring. Microspectroscopy can be used to analyze this tape in both exploded and unexploded devices. Detailed spectral information about the pigments and dyes used to color the tape is recovered from the samples. This technique also has the advantage of being non-destructive and requiring minimal sample preparation. The purpose of this paper is to detail the technique and show some sample results.

Experimental and Results

Five colored electrical tape samples were prepared for absorbance microspectroscopy by attaching them to a quartz slide, which provided a flat even surface for analysis. The five colors were blue, green, yellow, red, and white. The tape dimensions were 1.2 cm wide and 0.18 mm thick.

The 20/20 PV™ microspectrophotometer from CRAIC Technologies is the perfect tool for this type of analysis. This instrument is designed to detect small spectral changes in microscopic samples in the ultraviolet (UV), visible, and near infrared (NIR) regions of the electromagnetic spectrum. The 20/20 PV™ features a scientific grade CCD array detector, thermo-electric cooling, high spectral resolution, long-term stability, low noise, and the ability to acquire transmission, reflectance, and fluorescence spectra of samples as small as 1 x 1 microns.

For each absorbance measurement 50 scans were averaged, the sampling area was 10 by 10 microns, and the spectral range was 200 to 900 nm. The reference was acquired through an open area on the quartz slide. Figure 1 shows the absorbance spectra of all five colored samples.

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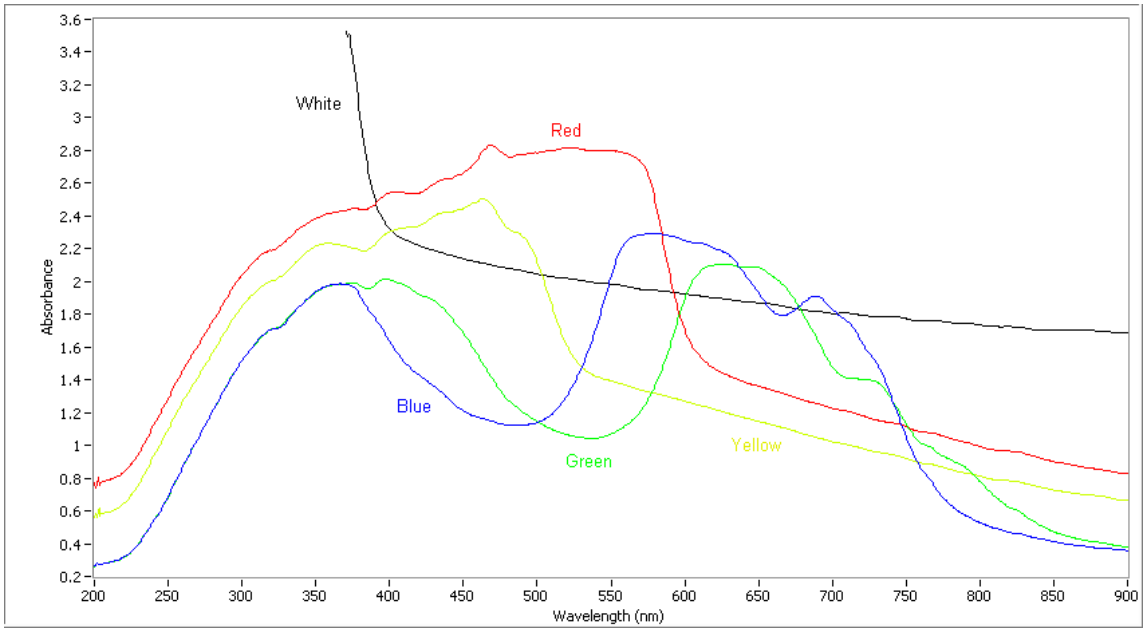

Figure 1. Overlay plot of the UV-Visible-NIR absorbance spectra of five colored electrical tape samples.

Each of the blue, green, yellow, and red spectra shows their distinct color characteristics in the visible (400 to 700 nm) wavelength range. For instance, the spectrum for the red tape shows that it absorbs most light in the visible region except for the red end. Each of these four colors also share similar spectral feature in the UV region below 400 nm. In this same region, the white tape shows a sharp increase in absorbance to levels undetectable by the instrument below 370 nm. This is similar to how glass absorbs most light below 350 nm. In the NIR region above 700 nm, the blue and green spectra show some distinct spectral peaks and valleys, whereas the other spectra show gradually decreasing absorbance values.

Conclusion

Using a 20/20 PV™ microspectrophotometer, it is simple to non-destructively acquire absorbance spectra from colored electrical tape. The instrument yields high quality UV-visible-NIR spectra which gives information about the dyes and pigments used in the tape. This is a valuable technique for examining trace evidence from IEDs.

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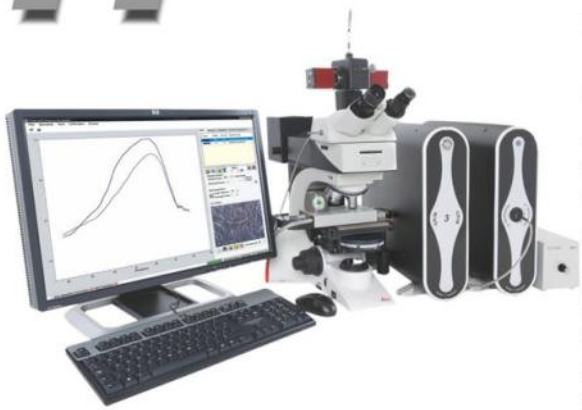

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Validating Glass Annealing Thresholds in an ISO World

Tiffany Eckert-Lumsdon, MS, Forensic Chemist, United States Army Criminal Investigation Laboratory

Introduction

Annealing is a useful technique that can be applied to classify glass as tempered or non-tempered in situations where questioned glass fragments lack discriminative morphology. Toughened glass is commonly encountered in forensic cases due to its use as vehicle side window and large commercial windows. The toughening or tempering of glass is due to stress imparted during the manufacturing process. This stress induces a change in the refractive index of the glass. Annealing, the process of heating fast and cooling slow, relieves that stress and results in a change in the refractive index of the glass to a higher value. The magnitude of the change in refractive index can then be used to classify the origin of a glass as tempered, semi-tempered, or non-tempered.

In order to establish a data range that can distinguish these types of glasses, a database of pre and post annealed refractive indices is needed. At the United States Army Criminal Investigation Laboratory, a database of glass samples was created between 1993 and 1998 using the *Emmons Double Variation* method for refractive index determinations. The transition to ISO accreditation in 2010 spurred the need for a new validation. The ISO validation centered on determining the appropriate cut-off value for classifying tempered glass with newer RI technology.

Furthermore, since the National Institute of Standards and Technology (NIST) does not provide a tempered glass standard, one sample from an automotive side window was selected as a standard due to its known origin and characteristics typical of tempered glass. This sample was analyzed multiple times to determine reproducibility of the oven program and its potential as a control standard for annealing runs.

Experimental Design

A *Foster and Freeman GRIM 3* was used to determine the pre and post annealed refractive index (RI) values for the 43 glasses collected for this study. The samples were annealed by placing them in a 16 slot annealing block made of Type 316 stainless steel. A *Fisher Programmable Furnace, Model 495A*, with linear heating and cooling rates was utilized. The change in magnitude of the pre and post annealed refractive indices was recorded. These refractive indices were assessed to determine the threshold criteria for tempered and non-tempered glass classification specific to the equipment/method used in our laboratory.

Oven Program

-20°C per minute to 200°C
-No hold
-20°C per minute to 400°C
-No Hold
-20°C per minute to 550°C
-Hold for 60 minutes
-Cool Down
-0.07°C per minute to 500°C
-Hold for 1 minute
-2.53°C per minute to 300°C
-No Hold
-2.53°C per minute to 35°C

Glass Annealing Database Results

ID	Make/Model	Year	VIN/Class	Glass Type	Annealing Date	RI	Temp	Annealed RI	Temp	Change in Temp	Change in RI
1	Ford F150	2004	1FTPX14544NC06338	*semi-tempered*	9/20/2010	1.52111	62.78	1.52274	58.43	4.35	0.00163
2	Ford Ranger	1999	1FTYR10C3XPA94403	tempered	9/20/2010	1.51951	67.15	1.52182	60.90	6.25	0.00231
3	Ford Ranger	1997	1FTCR14U6VPB26285	tempered	9/20/2010	1.51999	65.82	1.52225	59.72	6.10	0.00226
4	Mazda/B3000	1998	4F4YR16U2WTM15943	*semi-tempered*	9/20/2010	1.52102	63.01	1.52234	59.48	3.53	0.00132
5	Chevrolet Silverado C1500	2001	1GCEC19VX1Z170803	tempered	9/20/2010	1.52088	63.41	1.52348	56.38	7.03	0.00260
5	Chevrolet Silverado C1500	2001	1GCEC19VX1Z170803	tempered	1/28/2011	1.52099	63.13	1.52325	56.97	6.16	0.00226
6	Dodge Dakota	2000	1B7GL22N1YS587352	tempered	9/20/2010	1.52222	59.76	1.52454	53.47	6.29	0.00232
7 QC	Dodge Ram 2500	1998	3B7KC26Z2WM226368	tempered	9/20/2010	1.51982	66.37	1.52184	60.85	5.52	0.00202
7 QC	Dodge Ram 2500	1998	3B7KC26Z2WM226368	tempered	9/27/2010	1.51979	66.38	1.52182	60.85	5.53	0.00203
7 QC	Dodge Ram 2500	1998	3B7KC26Z2WM226368	tempered	9/29/2010	1.51979	66.38	1.52181	60.88	5.50	0.00202
7 QC	Dodge Ram 2500	1998	3B7KC26Z2WM226368	tempered	12/8/2010	1.51978	66.45	1.52182	60.89	5.56	0.00204
7 QC	Dodge Ram 2500	1998	3B7KC26Z2WM226368	tempered	1/28/2011	1.51977	66.46	1.52189	60.68	5.78	0.00212
8	Ford Explorer XLT	2006	1FMEU63E46UA04067	tempered	9/20/2010	1.52072	63.93	1.52289	57.97	5.96	0.00217
9	Ford Ranger	2006	1FTYR10U66PA86335	*semi-tempered*	9/27/2010	1.52129	62.30	1.52229	59.57	2.73	0.00100
11	Pontiac Grand Prix	1999	1G2WP12K7XF317229	tempered	9/27/2010	1.52138	62.12	1.52364	55.95	6.17	0.00226
12 a	Pontiac G6 GT	2006	1G2ZH558064215640	tempered	9/27/2010	1.52127	62.42	1.52344	56.50	5.92	0.00217
12 b	Pontiac G6 GT	2006	1G2ZH558064215640	*semi-tempered*	9/27/2010	1.52247	59.15	1.52354	56.22	2.93	0.00107
13	Pontiac Grand Prix SE	2003	1G2WK52J43F153641	tempered	9/27/2010	1.51914	68.24	1.52116	62.73	5.51	0.00202
16	Honda Accord	2004	1HGCM56834A118203	tempered	9/29/2010	1.52029	65.00	1.52262	58.67	6.33	0.00233
18	Chrysler PT Cruiser	2007	3A4FY48B07T510694	tempered	9/29/2010	1.52081	63.61	1.52302	57.60	6.01	0.00221
19	Mazda Protégé DX/LX	2001	JM1BJ222410476995	tempered	9/29/2010	1.51839	70.21	1.52073	63.84	6.37	0.00234
20	Acura Integra	1995	JH4DC4468SS030772	tempered	9/29/2010	1.52051	64.51	1.52266	58.66	5.85	0.00215
21	Nissan Altima	2005	1N4AL11D15N445043	*semi-tempered*	9/29/2010	1.52214	60.07	1.52347	56.47	3.60	0.00133
22	Volkswagen Jetta	1999	3VWRA81H3XM240834	tempered	9/29/2010	1.51822	70.77	1.52024	65.27	5.50	0.00202
23	Lexus LS 400	1991	JT8UF11EXM0089192	tempered	9/29/2010	1.51535	78.60	1.51738	73.01	5.59	0.00203
24	Honda Civic	2005	1HGES16365L003984	tempered	9/29/2010	1.51890	68.91	1.52107	62.99	5.92	0.00217
25	Suzuki Verona	2005	KL5VJ56L458156108	tempered	9/29/2010	1.51821	70.78	1.52037	64.92	5.86	0.00216
26	Dodge Caravan	2000	2B4GP2536YR811762	tempered	9/29/2010	1.52062	64.22	1.52275	58.41	5.81	0.00213
	GBI Glass Collection Samples										
27 (09.20)	PPG Architectural Glass colored "Azuria"	na	sheet glass	non-tempered	12/8/2010	1.52231	59.61	1.52309	57.48	2.13	0.00078
28 (10.02)	PPG Architectural Glass colored "Caribia"	na	sheet glass	non-tempered	12/8/2010	1.52303	57.60	1.52389	55.26	2.34	0.00086
29 (10.12)	Glass USA Corp	na	sheet glass	non-tempered	12/8/2010	1.51972	66.62	1.52057	64.30	2.32	0.00085
30 (10.18)	Tequiza Beer Agave Lime Anheuser Busch	na	container	non-tempered	12/8/2010	1.51876	69.27	1.5194	67.52	1.75	0.00064
31 (10.19)	New Castle Brown Ale	na	container	non-tempered	12/8/2010	1.52092	63.37	1.5216	61.53	1.84	0.00068
32 (10.21)	Mike's Hard Lemonade	na	container	non-tempered	12/8/2010	1.51812	71.02	1.51881	69.12	1.90	0.00069
33 (09.07)	Beringer White Zinfandel 2000	na	container	non-tempered	1/28/2011	1.51915	68.14	1.51982	66.31	1.83	0.00067
34 (09.09)	Architectural Door GBI	na	sheet glass	tempered	1/28/2011	1.51495	79.62	1.51711	73.75	5.87	0.00216
35 (09.10)	Architectural Door Holiday Inn	na	sheet glass	tempered	1/28/2011	1.51800	71.30	1.51991	66.1	5.20	0.00191
37 (09.14)	Cutlass Ciera Oldsmobile	1984	GBI Auto	*semi-tempered*	1/28/2011	1.51999	65.89	1.52115	62.71	3.18	0.00116
38 (09.17)	PPG Architectural "Atlantica"	na	sheet glass	non-tempered	1/28/2011	1.52178	61.02	1.52268	58.54	2.48	0.00090
39 (10.05)	Architectural Glass Centers USA	na	sheet glass	tempered	1/28/2011	1.52039	64.81	1.52263	58.71	6.10	0.00224
40 (10.09)	Sliding Glass Door from GBI	na	sheet glass	non-tempered	1/28/2011	1.51611	76.50	1.51727	73.33	3.17	0.00116
41 (10.16)	Guadalajara Salsa	na	container	non-tempered	1/28/2011	1.51618	76.28	1.51684	74.48	1.80	0.00066
42 (10.20)	Captain Morgan Spiced Rum	na	container	non-tempered	1/28/2011	1.51610	76.49	1.51690	74.29	2.20	0.00080
43 (10.32)	Maxi Lube Front Door	na	sheet glass	tempered	1/28/2011	1.51775	71.98	1.51972	66.61	5.37	0.00197
44 (10.38)	Northstar Grocery Store	na	sheet glass	tempered	1/28/2011	1.51807	71.11	1.52008	65.65	5.46	0.00201
45 (10.39)	Pharmacy Door	na	sheet glass	tempered	1/28/2011	1.51777	71.94	1.51971	66.64	5.30	0.00194
46 (10.76)	Sheet Glass Door	na	sheet glass	tempered	1/28/2011	1.51747	72.75	1.51967	66.76	5.99	0.00220

Summary

Tempered
RI Range:
0.0026-0.00191

Semi-Tempered
RI Range:
0.00163-0.00100

Non-Tempered
RI Range:
0.00090-0.00064

QC Tempered
Glass Average
RI: 0.00205

References

Caddy, B. Forensic Examination of Glass and Paint: Analysis and Interpretation. London: Taylor and Francis Forensic Science Series (2001).

Curran, J. Forensic Interpretation of Glass Evidence. Boca Raton: CRC Press LLC (2000).

Edmondstone, G. The Identification of Heat Strengthened Glass in Windshields, Canadian Society of Forensic Science Journal (1997) 30(4): 181-184.

Locke, J., and Rockett, L.A. The Application of Annealing to Improve the Discrimination Between Glasses, Forensic Science International (1985) 29(3, 4):237-245.

Locke, J., Sanger, D.J., and Roopnarine, G. The Identification of Toughened Glass by Annealing, Forensic Science International (1982) 20:295-301.

Locke, J., Winstanley, R., Rockett, L.A. and Rydeard, C. A Comparison of Long and Short Schedules for the Annealing of Glass Particles, Forensic Science International (1985) 29: 247-258.

Marcouiller, J.M. A Revised Glass Annealing Method to Distinguish Glass Types, Journal of Forensic Science (May 1990) 35(3):554-559.

Acknowledgements
*USACIL Trace Evidence Branch
*GBI Glass Examiners

PRELIMINARY SCHEDULE

Monday, July 9
9 a.m. – 5 p.m.
Techniques and Instrumentation Presentations, McRI lecture room
5:30 p.m. – 7 p.m.
*Dinner**, McRI garden
7 p.m. – 8 p.m.
Evening with Brian: "When Living Cells Make Humans Explode"
McRI lecture room

Tuesday, July 10
9 a.m. – 5 p.m.
Environmental and Industrial Microscopy Presentations, McRI lecture room
5 p.m. – 6 p.m.
Wine and cheese reception with exhibitors, McRI exhibit room

Wednesday, July 11
9 a.m. – 5 p.m.
Chemical and Forensic Microscopy Presentations, McRI lecture room
6:30 p.m. – 10 p.m.
*State Microscopical Society of Illinois Awards Dinner**, Berghoff Restaurant
17 W. Adams Street, Chicago

Thursday, July 12
9 a.m. – 5 p.m.
*Workshop: Mineralogy for Microscopists** (Part 1), McRI laboratories and classrooms

Friday, July 13
9 a.m. – 5 p.m.
*Workshop: Mineralogy for Microscopists** (Part 2), McRI laboratories and classrooms

Lunch breaks are 12 – 2 p.m. on Monday, Tuesday and Wednesday. On Thursday and Friday, lunch will be provided to workshop participants.

**Extra fee applies*

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2820 S. Michigan Avenue
Chicago, IL 60616-3230

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Inter/Micro 2012: An International Microscopy Symposium
July 9–13 • Conducted at McCrone Research Institute, Chicago

HOTELS

The recommended hotels for Inter/Micro 2012 are Club Quarters-Central Loop and Essex Inn. To receive discounted room pricing, please identify yourself as a McCrone Research Institute Inter/Micro attendee.

Essex Inn. 800 S. Michigan Avenue, Chicago, IL 60605, phone: 312-939-2800, toll-free: 800-621-6909. For hotel information and reservations, visit www.essexinn.com or e-mail reservations@essexinn.com.

Club Quarters, Central Loop. 111 W. Adams Street, Chicago, IL 60603, phone: 312-214-6400. For hotel information and reservations, visit www.clubquarters.com and enter password "mccrone" in the Members & Guests box.

FEES

	Before May 11	After May 11
Speaker, full conference	$150	$200
Attendee, full conference	$225	$275
Attendee, one day	$225	$225
Dinner Evening with Brian (Mon.)	$20	$28
ASTEE Dinner (Tues.)	$10	$15
SMSI Awards Dinner (Wed.)	$50	$58
Workshop (Thurs. & Fri.)	$450	$450

ABOUT

Inter/Micro is an internationally recognized conference that attracts microscopists from all areas of light and electron microscopy. McCrone Research Institute (McRI) is proud to host the weeklong Inter/Micro conference at its facilities in Chicago's South Loop.

Topics

- Techniques and Instrumentation
- Environmental and Industrial Microscopy
- Forensic and Chemical Microscopy

Events

- Two-day workshop: Microscopy for Mineralogists, taught by Mickey E. Gunter, professor of mineralogy and chair of the Department of Geological Sciences at the University of Idaho in Moscow, Idaho
- Social hour with exhibitors
- American Society of Trace Evidence Examiners Dinner at Reggie's Rock Club (free for ASTEE members)
- Photomicrography competition
- Silent auction conducted by the State Microscopical Society of Illinois (SMSI)
- Evening with Brian J. Ford: "When Living Cells Make Humans Explode"
- SMSI Awards Dinner: Mickey E. Gunter

REGISTRATION

To register, visit www.mcri.org and click on the Inter/Micro 2012 tab, e-mail intermicro@mcri.org or call 312-842-7100. You may also register at the conference.

TRANSPORTATION

If you are driving, we offer free parking in our lot. Please note that our parking lot is accessible from the southbound lane of Michigan Avenue just past 28th Street.

McCrone Research Institute is easily accessible by bus. The closest CTA bus stops are at 28th Street and Michigan Avenue, along the route of Chicago Transit Authority buses No. 1 and No. 4. Visit www.TransitChicago.com for assistance in planning trips using public transit.

You may also call taxi cabs for immediate pickup or book a ride for a future time:

Flash Cab, 773-561-1444
Yellow Cab Chicago, 312-829-4222

Program

Learning Objectives

The main objective of these workshops is to provide high quality hands-on training in the area of "Instrumental Trace Evidence Analysis" to forensic science practitioners that work in state and local public forensic laboratories. The training will be provided at **no charge** to participants.

The following workshops will be provided:

1. Examination and Comparison of Glass Evidence (for beginner and intermediate examiners)
2. Mass Spectrometry for Trace Evidence Workshop (for beginner and intermediate examiners)
3. Forensic Examination and Comparison of Paint, Tapes, and Adhesives with a Focus on Interpretation of the Evidence (for intermediate examiners)
4. Elemental Analysis of Forensic Evidence with focus a on Interpretation (for intermediate and advanced level examiners)

Attendees can apply for one or more courses, depending on their specific interests and experience and on availability.

Workshop Application

The workshops are sponsored by the National Institute of Justice. Registration fees, airfare and accommodation will be provided at no charge to participants **who are employed by state and local government forensic laboratories.** Each class will be limited to ~12 students.

For application materials,
please download the application forms at
http://teaf.fiu.edu
or contact Dr. Almirall at **almirall@fiu.edu**

Workshop Instructors

José R. Almirall, Ph.D - Facility Director
Professor of Chemistry / Director of IFRI
PH: 305 348 3917
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Tatiana Trejos, MSFS – Facility Manager
Coordinator of Research Programs
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Yong Cai, Ph.D.- Professor
Department of Chemistry and Biochemistry
Southeast Environmental Research Center

Piero R. Gardinali, Ph.D- Associate Professor
Department of Chemistry and Biochemistry
Southeast Environmental Research Center

Andria Hobbs Mehltretter, MSFS
Chemist - Forensic Examiner
FBI Laboratory

Robert Koons, Ph.D
Retired Researcher
FBI Laboratory

Location

Trace Evidence Analysis Facility

International Forensic Research Institute
Department of Chemistry and Biochemistry
Florida International University
11200 SW 8th Street, OE 109
University Park, Miami, FL 33199

Funded by the National Institute of Justice (NIJ) under cooperative agreement 2010-DN-BX-K264

Forensic Science Training Development and Delivery Program

INSTRUMENTAL ANALYSIS of TRACE EVIDENCE WORKSHOPS WITH a FOCUS on INTERPRETATION INSTRUCTION

teaf forensic elemental solutions

Trace Evidence Analysis Facility (TEAF)
Florida International University - Miami, FL
Department of Chemistry and Biochemistry and
International Forensic Research Institute (IFRI)

NIJ National Institute of Justice

FIU International Forensic Research Institute

Program Description

Each workshop will be offered for one week and will include lectures as well as hands-on laboratory-based exercises at the Chemistry and Biochemistry Department and the International Forensic Research Institute laboratories on the campus of Florida International University in Miami, Florida.

Forensic Examination and Comparison of
Glass Evidence
May 21st-25th, 2012

This course will be suitable as an introduction to forensic examiners with no or little experience in glass analysis and also as a continuing education tool for intermediate-level examiners. Following the completion of this workshop, the participants will be familiar with theoretical and practical aspects of different techniques for the forensic analysis of glass such as refractive index (GRIM 3), µXRF, LIBS, LA-ICP-MS, and ICP-MS. The participants will be able to conduct a critical evaluation of limitations and capabilities of these techniques, including sampling procedures, sample preparation methods, quality control, data analysis and interpretation of results. This workshop will emphasize evidence examination and interpretation of data obtained.

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Mass Spectrometry
for Trace Evidence
May 14th-18th, 2012

This course will be suitable as an introduction to forensic examiners with some experience in mass spectrometry and also as a continuing education tool for intermediate-level examiners. This workshop offers a basic description of the processes and techniques involved in creating, controlling and measuring elemental or molecular ionic species by mass spectrometry techniques and its application to the analysis of forensic samples. Topics covered in the course include: a) theory of mass spectrometry, b) aimethods of ionization, c) instrument design and operation, d) Combined Chromatography and Mass Spectrometry, e) quantitative aspects of mass spectrometry. The workshop is also designed to provide hands-on experience on the following techniques: Laser Ablation-ICP-MS, Gas Chromatography-Mass Spectrometry (GC/MS) and Liquid Chromatography - Mass Spectrometry (LC/MS) all with an aim to address the specific analytical requirements of the trace evidence examiner.

Forensic Examination and Comparison of
Paint, Tapes, and Adhesives
with a Focus on Interpretation of the Evidence
June 25th-29th, 2012

This course will be suitable as an introduction to forensic examiners with some experience in polymer, paint, and adhesives analysis and also as a continuing education tool for intermediate-level examiners. This course will provide a thorough introduction to the forensic examination of these materials including fundamentals on instrumental analysis (FTIR, XRD, XRF, SEM, ICP methods, Pyr-GCMS, microscopy), handling and sample preparation, manufacture and composition, end-use applications, terminology, ASTM and SWGMAT standard methods of analysis, interpretation and evidential significance, validation studies on discrimination power, databases and sample collections, report writing, and testimony. The course topics will be summarized with presentation and discussions of a series of case studies where the students will be able to apply the learning topics to the interpretation of results and forming their expert opinion.

Elemental Analysis
of Forensic Evidence
with Focus on Interpretation of the Evidence
November 12th-16th, 2012

Upon completion of this workshop the participants will be able to understand and review the basic principles and practical aspects of the application of different techniques for forensic elemental analysis of trace evidence. The workshop will cover the following; XRF, SEM-EDS, ICP-MS, LA-ICP-MS and LIBS. The participants will be able to conduct a critical evaluation of the limitations and capabilities of these techniques, including sampling procedures, sample preparation methods, quality control, data analysis and interpretation of results. Lectures will include a review of the fundamentals of the above techniques and their application to the analysis of different types of trace evidence such as glass, paint, soil and documents. The course will be focused on forensic aspects of statistical data treatment, match criteria, and interpretation of elemental analysis.

Electronic materials for each course will be available in the future; visit

http://teaf.fiu.edu

ASTEE Membership Application

DIRECTIONS:
1. All information supplied on this form WILL be verified.
2. Type or print in ink and check your preferred mailing address.
3. Attach a copy of your curriculum vitae/resume and lists of applicable forensic coursework to this form.
4. Have two (2) current ASTEE members propose and second your membership application.
5. Enclose a check or money order (made payable to ASTEE), for the non-refundable $5.00 application fee.
6. Mail application and fee to the Treasurer (see address below).

Name:

Agency:

Title:

Preferred Mailing Address: □ HOME □ BUSINESS

Business Phone: ( ) EXT. _____ **E-mail Address:**

Education and Experience: (attach Curriculum Vitae/resume and a list of applicable forensic course work)

Please select any disciplines in which you actively conduct analysis/examinations.

Administration	Forensic Education	Impression Evidence
Arson	General Unknowns	Ink
Explosives	Glass	Paints & Polymers
Fibers	Gunshot Residue	Physical Matches
Fire Debris	Hairs	Soil

My signature acknowledges that all information on this form is accurate to the best of my knowledge.

_____
Signature of Applicant Date

PROPOSAL FOR MEMBERSHIP:

ASTEE Member #1 Signature: Printed Name: Daytime phone: ( )	ASTEE Member #2 Signature: Printed Name: Daytime phone: ( )
ASTEE Treasurer Amy Michaud ATF National Laboratory 6000 Ammendale Road Ammendale, MD 20705	**For ASTEE Use Only** Date application & fee received: Check No. ASTEE Membership No.

Treasurer/Dues Remittance
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