

OSAC RESEARCH NEEDS ASSESSMENT FORM



Title of research need:

Keyword(s):

Submitting subcommittee(s): **Date Approved:**

Background Information:

1. Does this research need address a gap(s) in a current or planned standard? (ex.: Field identification system for on scene opioid detection and confirmation)

This research need covers various standard documents on both the forensic analysis of paint and tape, such as ASTM E1610-18 – Standard Guide for Forensic Paint Analysis and Comparison, E3260-21 – Standard Guide for Forensic Examination and Comparison of Pressure Sensitive Tapes, ASTM E3085-17 - Standard Guide for Fourier Transform Infrared Spectroscopy in Forensic Tape Examinations, or E2937-18 – Standard Guide for Using Infrared Spectroscopy Forensic Paint Examinations.

2. Are you aware of any ongoing research that may address this research need that has not yet been published (e.g., research presented in conference proceedings, studies that you or a colleague have participated in but have yet to be published)?

None.

3. Key bibliographic references relating to this research need: (ex.: Toll, L., Standifer, K. M., Massotte, D., eds. (2019). Current Topics in Opioid Research. Lausanne: Frontiers Media SA. doi: 10.3389/978-2-88963-180-3)

Weimer RB, Wright DM, Hodgins T. Paints and Polymers (ch.3). In: Desiderio VJ, Taylor CE, Nic Daéid N. Handbook of trace evidence analysis. Wiley, Hoboken, NJ (2020): 157-218.

4. Review the annual operational/research needs published by the National Institute of Justice (NIJ) at <https://nij.ojp.gov/topics/articles/forensic-science-research-and-development-technology-working-group-operational#latest>? Is your research need identified by NIJ?

No.

5. In what ways would the research results improve current laboratory capabilities?

Trace evidence examiners will gain knowledge on the relevant features detected with current or novel instrumentation that enable the recognition, characterization, and reliable comparison of these materials. For example, are the materials used for their construction commonly shared between different vinyl wraps? Are there vinyl subclasses to offer sufficient differentiation potential? Are there components that are more selective than others? Also, trace evidence examiners will gain knowledge and understanding on the transfer propensity of vinyl wraps and on the potential effects that wrap materials have on paint transfer.

6. In what ways would the research results improve understanding of the scientific basis for the subcommittee(s)?

Research outcomes are expected to inform the subcommittee about the properties of vinyl wraps as a basis to recommend the best course of action for their analysis and evidential value. A better understanding on the best way to integrate new knowledge about their compositional and transfer properties in current standard documents on paint, tape, or both, is also expected.

7. In what ways would the research results improve services to the criminal justice system?

With the increasing popularity of vinyl wraps, this research will increase the confidence in trace evidence examinations pertaining to a type of materials that has not been investigated at this point. A new body of literature on this subject will form the basis of informed and reliable interpretations for this type of comparative examinations.

8. Status assessment (I, II, III, or IV):

I

	Major gap in current knowledge	Minor gap in current knowledge
No or limited current research is being conducted	I	III
Existing current research is being conducted	II	IV

This research need has been identified by one or more subcommittees of OSAC and is being provided as an informational resource to the community.