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# Forensic Chemistry

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## Editorial

We are thrilled to bring you this first issue of *Forensic Chemistry*, a new journal focused on the theory, research and application of any chemical science related to forensic science. We would first like to thank Elsevier for their willingness to publish this new journal, *Forensic Chemistry*, whilst continuing to support their ongoing forensic science journals, *Forensic Science International*, *Science and Justice* and the *Journal of Forensic and Legal Medicine*. We are also indebted to all our colleagues who have agreed to serve on the editorial board, to help promote the journal, to submit manuscripts for publication, and to assist with peer review. Finally, we are grateful to the forensic chemistry community for your willingness to submit your work and read and cite our journal articles.

Our goal is to disseminate the best forensic chemistry research findings and to help lay the scientific foundations for the admissibility of forensic evidence for years to come. Given the recent uptick in research activity within the forensic chemistry community, the timing for *Forensic Chemistry* couldn't be better! We hope our journal brings attention to forensic chemistry research by: 1) providing a focused and undiluted channel for dissemination of chemistry-related content, and 2) by providing an easy access point to engaging the wider analytical chemistry community that is interested in forensic applications. Finally, we are particularly interested in encouraging practitioners of forensic chemistry to submit manuscripts, especially because our intent is to bridge research and practice for the benefit of both communities.

After more than a year of preparation, *Forensic Chemistry* was launched in late February 2016 and we have since received more than 50 manuscripts for consideration. This first volume exemplifies our unique intent to cover all aspects of forensic chemistry research, from fundamental observations through inter-laboratory method validations and proficiency tests. We have manuscripts covering techniques as diverse as color tests, thin layer chromatography (TLC), HPLC, GC/MS, Raman spectroscopy, DART-MS and ESI-MS, isotope ratio mass spectrometry (IRMS) and applications as diverse as body fluid identification, botanic matter, drugs (bulk and in tissues), explosives, ignitable liquids and gun shot residues (GSR).

Regarding our commitment to fundamental and applied papers, we are proud to introduce a unique system for labeling and searching published manuscripts, which is based on a Transition Readiness Level (TRL). The purpose of the TRL system is to help readers understand the level of maturity of an idea or method, to help track the evolution of readiness of a given technique or method, and to help filter published articles by the expected ease of implementation in an operation setting within an operational forensic laboratory. Four TRL levels are available:

**TRL 1:** Basic research phenomenon observed or basic theory proposed, which may find application to a proposed area of forensic chemistry. Examples include one-off instruments that make unique measurements, the study of chemical properties of explosives, and the first reporting of some basic measurements or observations from chemical analysis.

**TRL 2:** Development of a theory or research phenomenon that has a demonstrated application to a specified area of forensic chemistry, including supporting data. Examples include the first application of an instrument or technique to a forensic application, or the application of a model or theory to simulated casework. Examples include models that predict weathering of ignitable liquids, new or improved separation or measurement capabilities, or development of chemometric tools with an aim to better describe the significance of chemical evidence.

**TRL 3:** Application of an established technique or instrument to a specified area of forensic chemistry with measured figures of merit, some measurement of uncertainty, and developed aspects of intra-laboratory validation. TRL 3 methods should be practicable on commercially available instruments and results of the first inter-laboratory trials can also be reported as TRL 3 communications.

**TRL 4:** Refinement, enhancement, and inter-laboratory validation of a standardized method ready for implementation in forensic laboratories. New knowledge in this area can be immediately adopted or used in casework. Examples are case reports, fully validated methods or protocols that have undergone or are currently being considered by a standard development organization, measures of error rates and database development and reporting.

TRL levels are proposed by authors when they submit an article for publication, reviewed by the peer-reviewers and approved by the editors. Readers are able to easily filter articles by the four different TRLs by clicking on the "Virtual Special Issues" tab at the journal homepage and selecting the desired TRL level. We hope this will help all readers find work that is relevant to their needs, and especially practitioners who are interested in easily transferable knowledge.

We are very grateful for the opportunity to bring you this first volume of *Forensic Chemistry*, and we look forward to continuing to disseminate the best quality and highest impact research in forensic chemistry.

*Editors-in Chief*  
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