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Abstract for an Invited Paper
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Ultrafast studies of shock induced chemistry-scaling down the size by turning up the heat

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We will discuss recent progress in measuring time dependent shock induced chemistry on picosecond time scales. Data on the shock induced chemistry of liquids observed through picosecond interferometric and spectroscopic measurements will be reconciled with shock induced chemistry observed on orders of magnitude larger time and length scales from plate impact experiments reported in the literature. While some materials exhibit chemistry consistent with simple thermal models, other materials, like nitromethane, seem to have more complex behavior. More detailed measurements of chemistry and temperature across a broad range of shock conditions, and therefore time and length scales, will be needed to achieve a real understanding of shock induced chemistry, and we will discuss efforts and opportunities in this direction.