

Supporting Information

Facile and Efficient Preparation of Organoimido Derivatives of $[\text{Mo}_6\text{O}_{19}]^{2-}$ using Accelerated Reactions in Leidenfrost Droplets

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Figure S2 Real-time ESI monitoring on the reaction of $1 + 3 \rightarrow 7$ performed in Leidenfrost droplet (left panel) and bulk-phase solution (right panel) at different time intervals. The solid red triangle indicates the product **7**. The ESI-MS spectrum of the re-dissolved precipitate, isolated from the reaction solution upon completion, in CH_3CN was also shown at the bottom of right panel.

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Figure S4 Real-time ESI monitoring on the reaction of $1 + 5 \rightarrow 9$ performed in Leidenfrost droplet (left panel) and bulk-phase solution (right panel) at different time intervals. The solid red triangle indicates the product **9**. The ESI-MS spectrum of the re-dissolved precipitate, isolated from the reaction solution upon completion, in CH_3CN was also shown at the bottom of right panel.

Figure S5 Conversion ratio (*CR*) over time for the reaction of $1 + 3 \rightarrow 7$ in (a) bulk and (b) constant volume 500- μL Leidenfrost droplet reactor. Mass spectra for similar conversion ratios were given underneath.

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S1: Further description of Leidenfrost experiment

The volume of Leidenfrost droplet was kept constant by monitoring the diameter of the droplet over the course of reaction using a scale bar. The scale bar is a ruler with a magnifying glass. The uncertainty associated with the determination of droplet size is ca. ± 1 mm (in diameter). The levitated droplet only moves within very limited space (not turbulent) during the reaction. The addition rate of the reaction mixture was carefully adjusted so that the volume of droplet can keep approximately the same which was constantly monitored by a scale bar. It is one source of error involved in the final result.

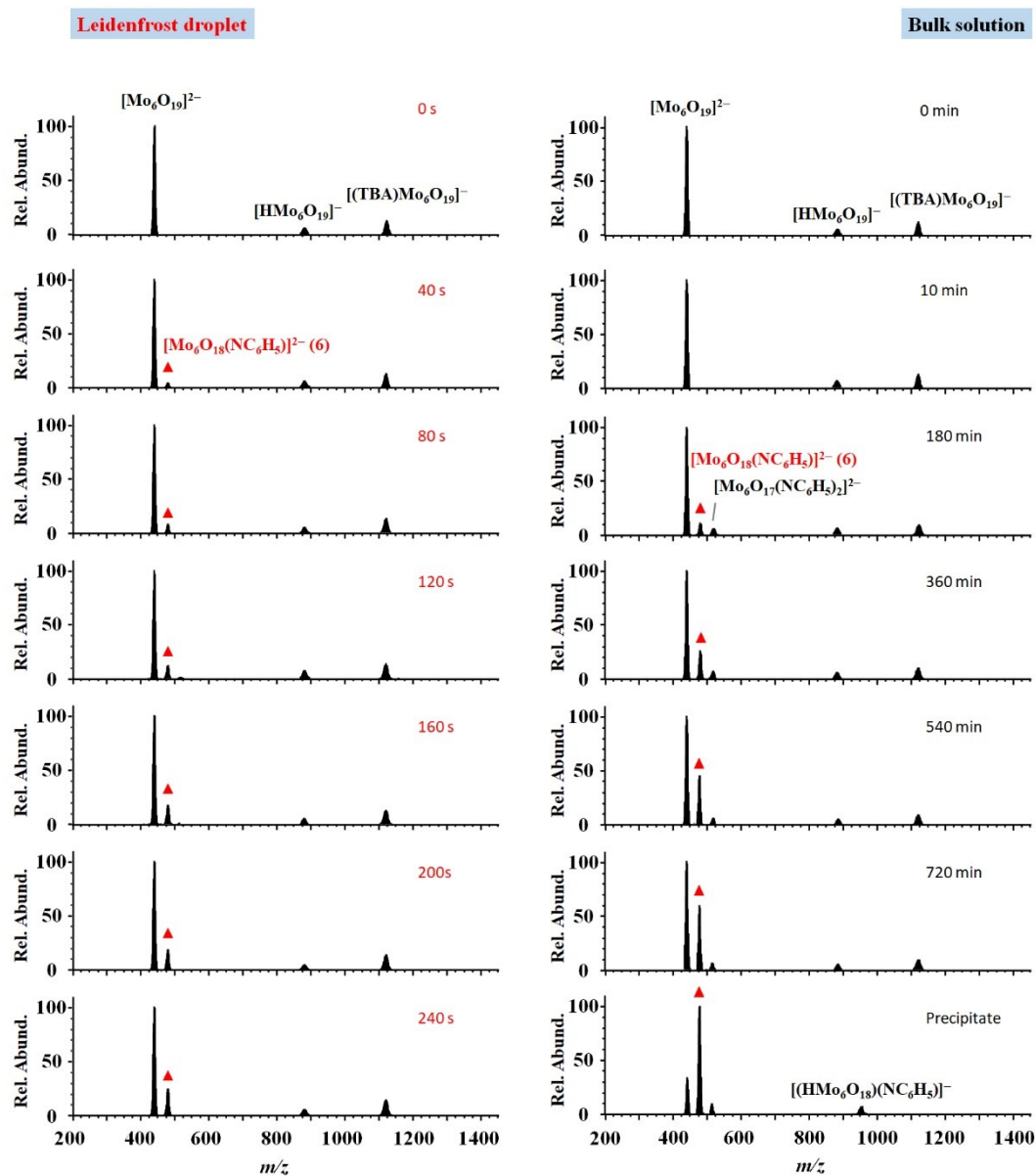


Figure S1. Real-time ESI monitoring on the reaction of **1** + **2** \rightarrow **6** performed in Leidenfrost droplet (left panel) and bulk-phase solution (right panel) at different time intervals. The solid red triangle indicates the product **6**. The ESI-MS spectrum of the re-dissolved precipitate, isolated from the reaction solution upon completion, in CH_3CN was also shown at the bottom of right panel.

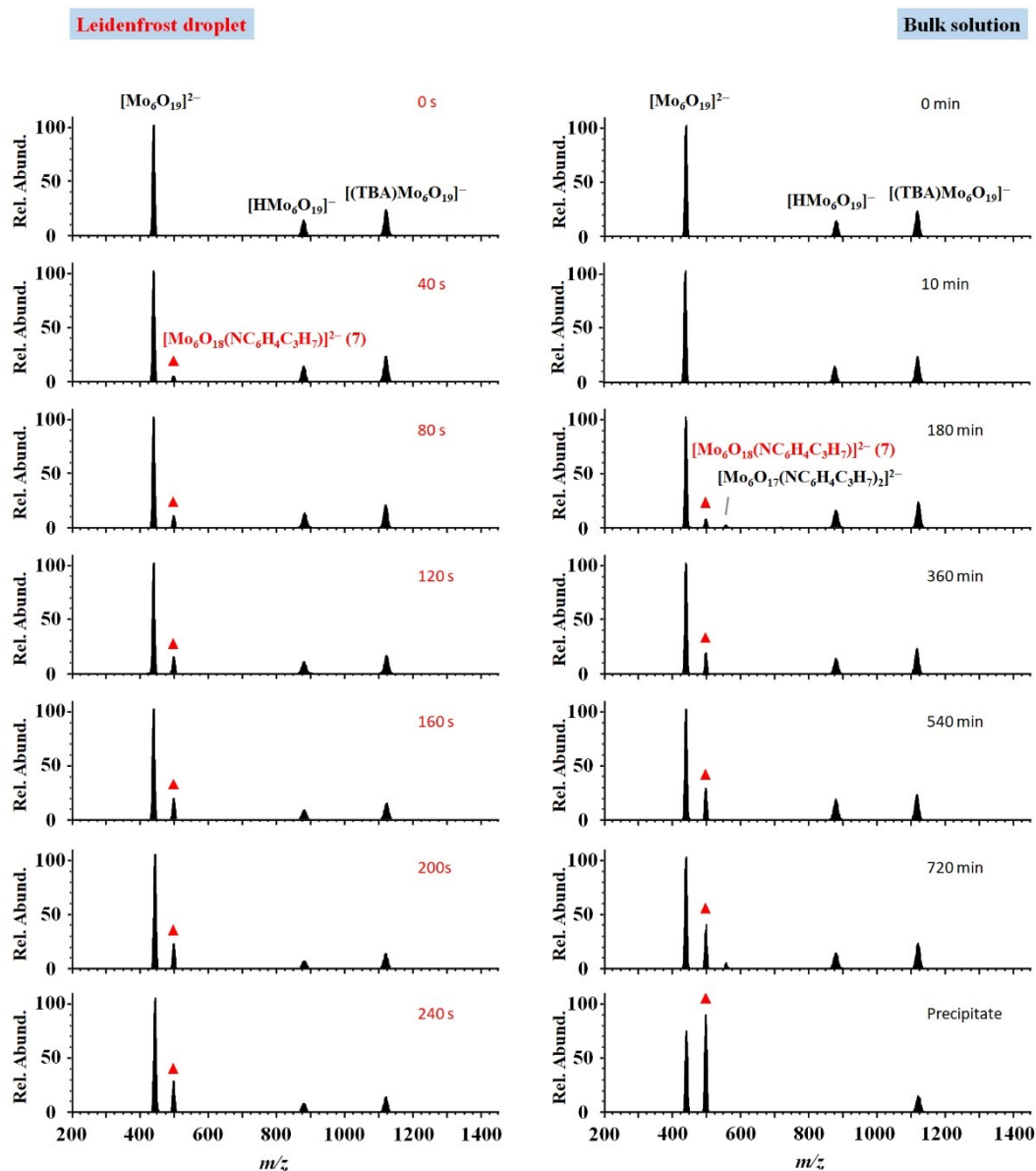


Figure S2. Real-time ESI monitoring on the reaction of $1 + 3 \rightarrow 7$ performed in Leidenfrost droplet (left panel) and bulk-phase solution (right panel) at different time intervals. The solid red triangle indicates the product 7. The ESI-MS spectrum of the re-dissolved precipitate, isolated from the reaction solution upon completion, in CH_3CN was also shown at the bottom of right panel.

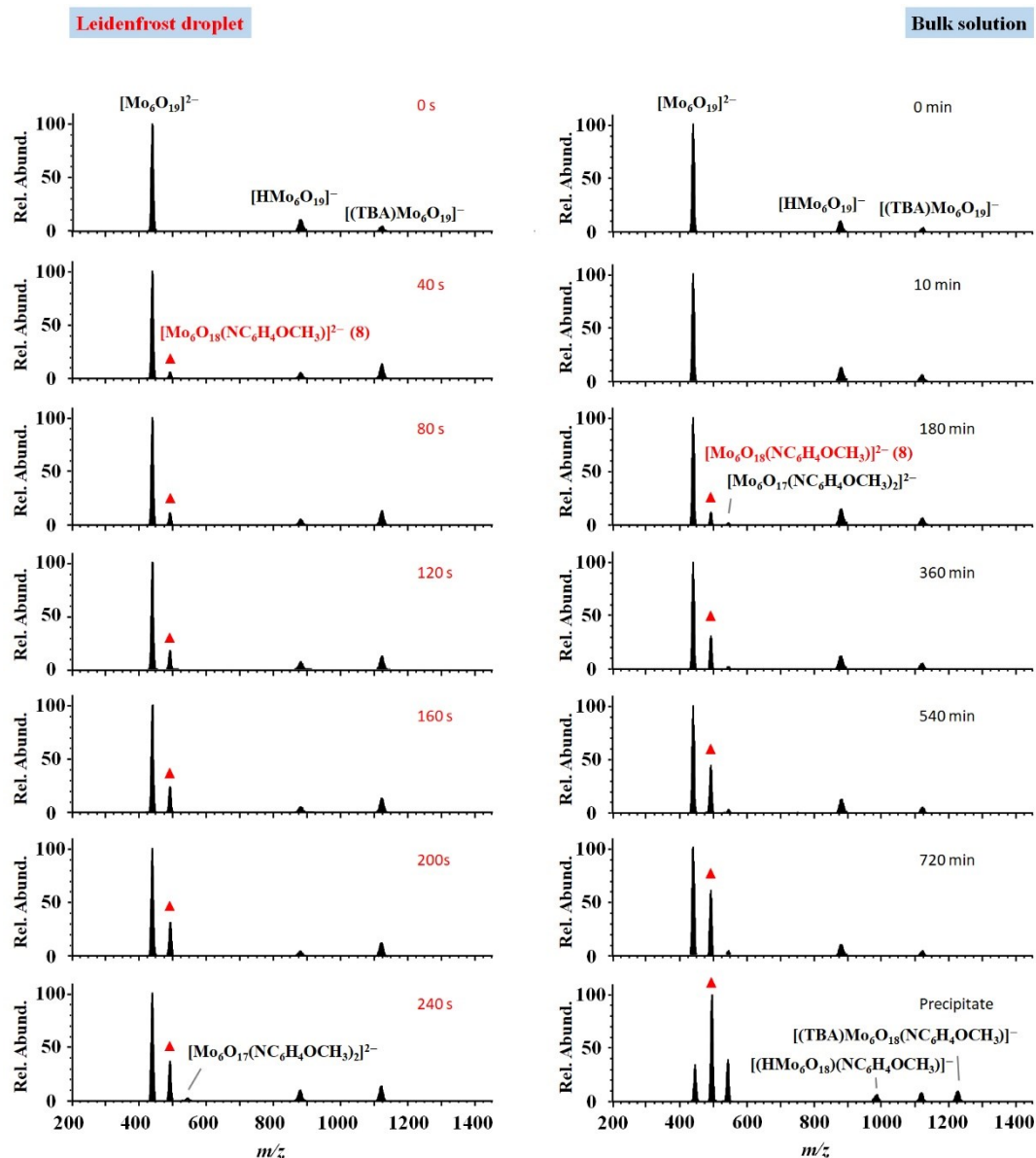


Figure S3. Real-time ESI monitoring on the reaction of $1 + 4 \rightarrow 8$ performed in Leidenfrost droplet (left panel) and bulk-phase solution (right panel) at different time intervals. The solid red triangle indicates the product **8**. The ESI-MS spectrum of the re-dissolved precipitate, isolated from the reaction solution upon completion, in CH_3CN was also shown at the bottom of right panel.

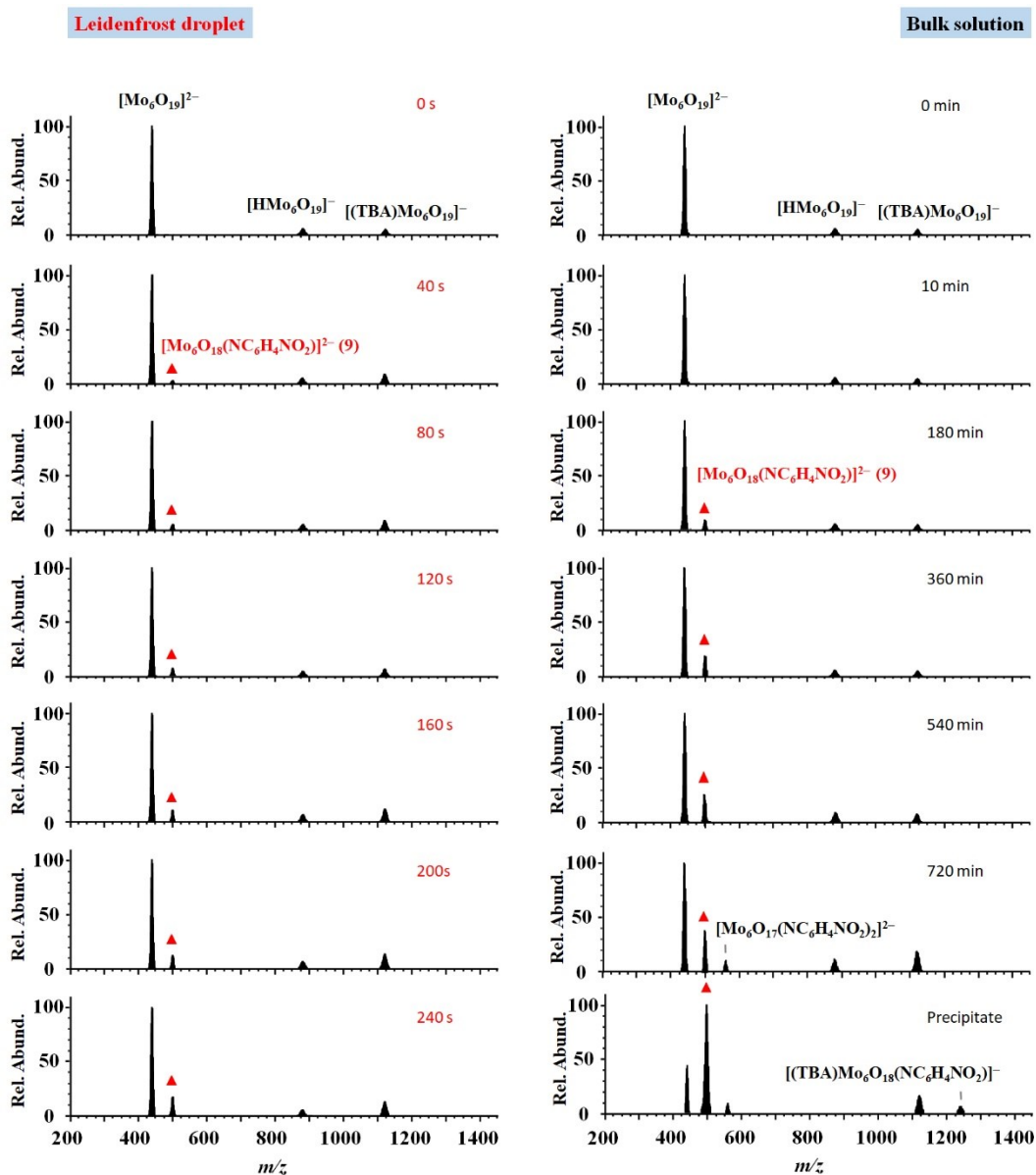


Figure S4. Real-time ESI monitoring on the reaction of **1** + **5** → **9** performed in Leidenfrost droplet (left panel) and bulk-phase solution (right panel) at different time intervals. The solid red triangle indicates the product **9**. The ESI-MS spectrum of the re-dissolved precipitate, isolated from the reaction solution upon completion, in CH_3CN was also shown at the bottom of right panel.

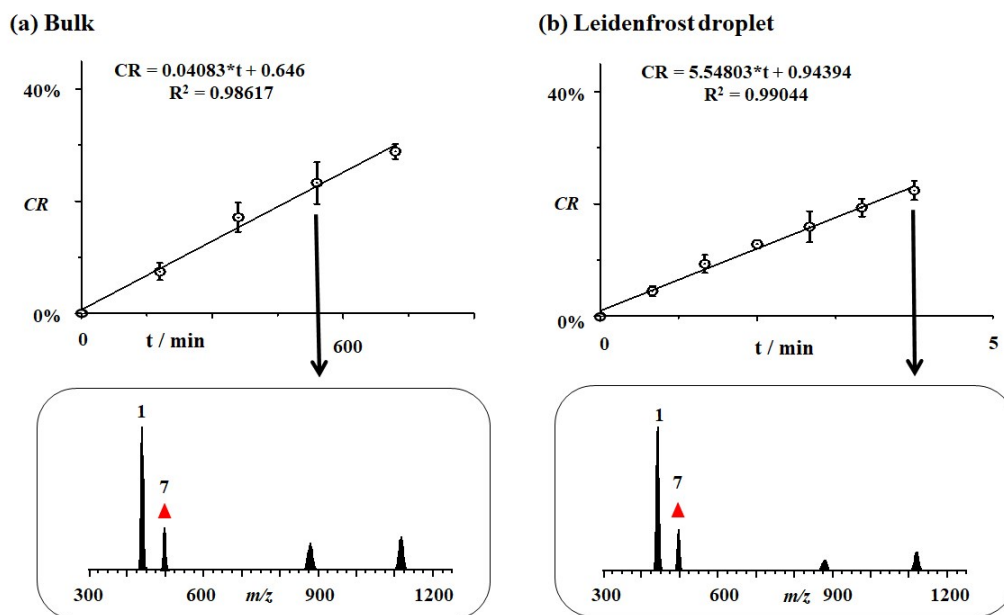
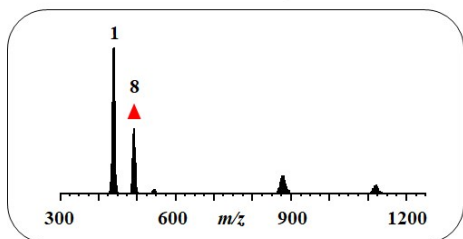
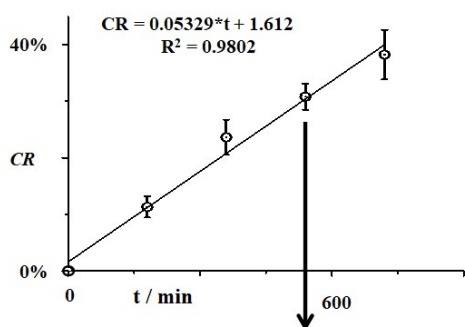


Figure S5. Conversion ratio (CR) over time for the reaction of $1 + 3 \rightarrow 7$ in (a) bulk and (b) constant volume 500- μL Leidenfrost droplet reactor. Mass spectra for similar conversion ratios were given underneath.

(a) Bulk



(b) Leidenfrost droplet

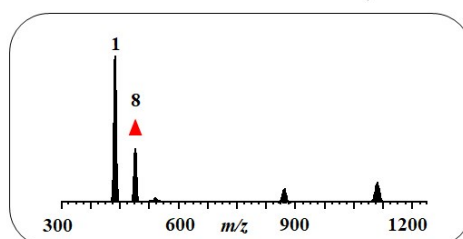
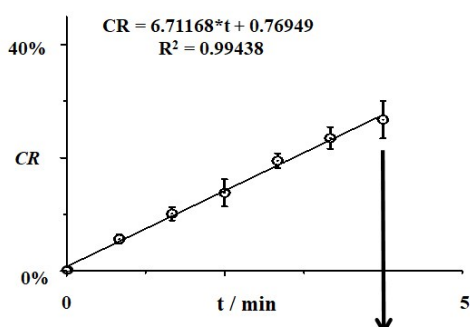
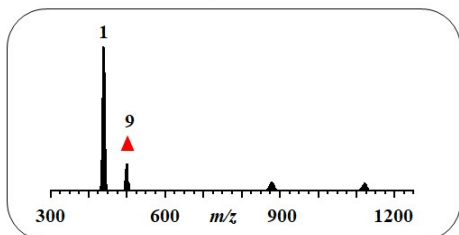
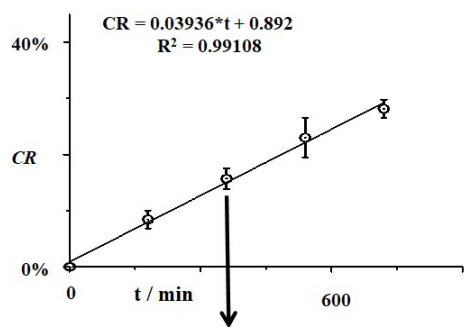


Figure S6. Conversion ratio (CR) over time for the reaction of **1** + **4** \rightarrow **8** in (a) bulk and (b) constant volume 500- μ L Leidenfrost droplet reactor. Mass spectra for similar conversion ratios were given underneath.

(a) Bulk



(b) Leidenfrost droplet

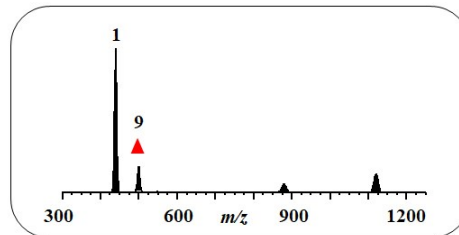
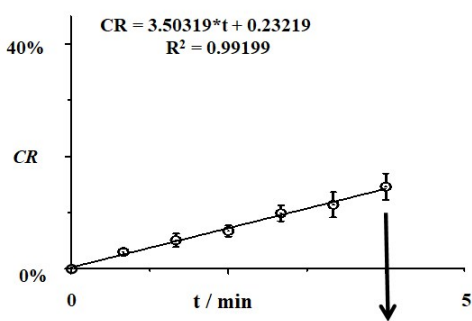


Figure S7. Conversion ratio (*CR*) over time for the reaction of **1** + **5** → **9** in (a) bulk and (b) constant volume 500- μ L Leidenfrost droplet reactor. Mass spectra for similar conversion ratios were given underneath.