

unmeasured fragment. If these assumptions are in error, then the derived distributions are inaccurate. Usually the assumption is made that the undetected fragment is internally cold, although in at least one case this issue was considered explicitly.³⁸ As we have seen, for the forward scattered products in the pentane and propane case, this is a fairly accurate assumption. For the backscattered distributions, however, this is grossly incorrect.

5. Conclusion

The studies detailed above illustrate the broad range of new possibilities for chemical dynamics studies made possible by application of intense, tunable VUV light from third-generation synchrotron sources. Application in photodissociation studies have shown that advantages of a probe that is at once *selective* and *universal* for unraveling complex dynamics in challenging systems. Crossed-beam studies show the power of a very low background, universal probe to yield a global view of the detailed dynamics for reactions involving challenging hydrocarbon systems. Exciting new possibilities are in the offing as ion imaging methods are adapted to chemical dynamics studies using synchrotron radiation in the near future.

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