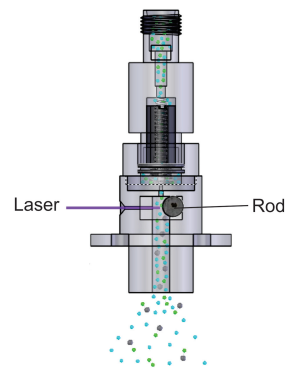


# A CHIRPED PULSE FOURIER TRANSFORM MICROWAVE (CP-FTMW) SPECTROMETER WITH LASER ABLATION SOURCE TO SEARCH FOR ACTINIDE-CONTAINING MOLECULES AND NOBLE METAL CLUSTERS

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Microwave spectroscopic techniques have traditionally been part of the foundation of molecular structure and this conference. Instrumental developments by Brooks Pate and sourcing developments by Steve Cooke on these instruments have allowed for the dawning of a new era in modern microwave spectroscopic techniques.<sup>ab</sup> With these advances and the growth of powerful computational approaches, microwave spectroscopists can now search for molecules and/or cluster systems of actinide and noble metal-containing species with increasing certainty in molecular assignment even with the difficulties presented with spin-orbit coupling and relativistic effects. Spectrometer and ablation design will be presented along with any preliminary results on actinide-containing molecules or noble metal clusters or interactions.



<sup>a</sup>G. G. Brown, B. C. Dian, K. O. Douglass, S. M. Geyer, S. T. Shipman, B. H. Pate, *Rev. Sci. Instrum.* **79** (2008) 053103-1 – 053103-13.

<sup>b</sup>G. S. Grubbs II, C. T. Dewberry, K. C. Etchison, K. E. Kerr, S. A. Cooke, *Rev. Sci. Instrum.* **78** (2007) 096106-1 – 096106-3.