

MICROWAVE SPECTROSCOPY AND STRUCTURE DETERMINATION OF ORGANOSILICON COMPOUNDS: A CELEBRATION OF A DECADE OF COLLABORATION

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In this reflective presentation, we will discuss a fruitful, decade long collaboration between the speaker and Prof. Gamil Guirgis at the College of Charleston^a and Gamil's now distinct contributions to organosilicon chemistry. In particular, we will focus on Gamil's facilitation of undergraduate students and young scientists in their study of the chemical and spectroscopic properties of these molecules, as well as his use of microwave and infrared spectroscopy (and spectroscopists!) as essential methods for chemical analysis.

Our discussion will primarily focus on recent microwave studies, such as silylcyclohex-2-ene, 1,1-difluorosilylcyclohex-2-ene and cyclopentylsilane, whose spectra were recently acquired in the Grubbs lab at Missouri S&T. However, given the timely nature of celebrating a decade of collaboration between Gamil and the speaker, we will highlight the history and past results of Gamil's collaborations with microwave spectroscopists in the past decade, which stretches across multiple laboratories and research groups, many of which have been featured at ISMS in past years.^b

Finally, we use this story as motivation to discuss the collaborative interface between the "spectroscopist" with the "chemist". As microwave spectroscopy continues to climb up the formidable but traversable mountain towards mainstream chemical applicability, Gamil's work with microwave spectroscopists offers a unique and compelling example of how microwave spectroscopy and spectroscopists can provide (and have provided) essential services for those interested in chemical synthesis.

^aN. A. Seifert; G. A. Guirgis; B. H. Pate, *J. Mol. Struct* **2012**, 1023, 222.

^bExamples include: T. M. C. McFadden; N. Moon; F. E. Marshall, *et al.*, *Phys. Chem. Chem. Phys* **2022**, 24, 2454; G. A. Guirgis; J. S. Overby; M. H. Palmer, *et al.*, *J. Phys. Chem. A* **2012**, 116, 7822; G. A. Guirgis; R. E. Sonstrom; A. J. Clark, *et al.*, *J. Phys. Chem. A* **2019**, 123, 4389.