

## Construction of a pulsed nozzle fourier transform microwave spectrometer to study the lithium bond

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Hydrogen bond is ubiquitous in chemistry and biology. Several chemists have considered the existence of an analogous lithium bond<sup>1,2</sup>, though experimental verification has been scarce<sup>2</sup>. Pulsed nozzle fourier transform microwave (PNFTMW) spectrometer is ideal for forming and observing the lithium bond. It employs supersonic expansion to form weakly bound complexes such as hydrogen-bonded or van der Waals complexes. By introducing a hot nozzle, one could form complexes of lithium halides. In principle, one could study any complex formed by atoms, molecules, radicals and ions. From the microwave spectrum of the complex, moments of inertia and equilibrium geometry can be determined. This is the first step towards obtaining the 'intermolecular' potential, which is important in understanding intermolecular interactions. The construction of PNFTMW spectrometer is quite involved<sup>3,4</sup>.

### References

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