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Type: **Invited Speaker / Conférencier(ère) invité(e)**

(I) New life for old instrumentation: the revival of a 1981-vintage Bomem DA3 high resolution Fourier transform spectrometer.

Monday 19 June 2023 10:45 (30 minutes)

The Bomem DA3 series of Fourier transform (FT) spectrometers were the first commercially available research-grade instruments of their type. They were available for purchase from 1980-2000. This FT could achieve an ultimate resolution of 0.0025 cm⁻¹, with a resolvance of 106 at any wavelength, impressive specifications even for a similar modern instrument. The scanning Michelson interferometer and on-board electronics were simple and robust, but the computer systems that controlled the instrument, collected the interferograms and processed the spectra have long been obsolete.

We inherited a DA3 FT from Dr. Anthony Merer at UBC and, with the help of colleagues in Lyon, France who run a similar instrument, our group has revived it with new methods for control of the mechanical components, and for new data collection and processing procedures. The instrument is now routinely used to record dispersed fluorescence spectra of metal-bearing molecules generated in our lab at UNB. The talk will focus on the revival of the DA3, ways in which we have obtained improved performance from it, and extensions to its capabilities not available in the 1980s.

Keyword-1

Keyword-2

Keyword-3

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