

The Department of Mechanical Engineering Presents

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**Title:** Beyond particle mobility classifiers: Classifying particles by mass or relaxation time

**Abstract:** Mobility classifiers, like the differential mobility analyzer (DMA), have been used for decades to separate polydisperse aerosols into classes so that the particles can be counted or otherwise measured by another instrument. The DMA is routinely used to measure particle count distributions or generate a “monodisperse” aerosol. More recently, classifiers have been developed to classify particles by their mass-to-charge ratio (centrifugal particle mass analyzers, CPMA) or relaxation time (aerodynamic aerosol classifier, AAC). This presentation will describe the operating principles behind the CPMA and AAC and show how they can be used in applications where a DMA is not suitable or how they can be used in tandem with other instruments.



**About the Speaker:** Dr Jason Olfert is Professor in Mechanical Engineering at the University of Alberta. His research is focused on developing novel aerosol instruments and characterizing particulate emissions from combustion sources. Dr. Olfert’s past and current research is focused on particulate emissions from internal combustion engines, gas turbine engines, flares, and burners. He has worked on the development of the centrifugal particle mass analyzer (CPMA), aerodynamic aerosol classifier (AAC), and the miniature inverted soot generator (MISG) which are all commercially available instruments. Dr Olfert serves as an editor for the journal Aerosol Science and Technology. Dr Olfert has been awarded the Sheldon K Friedlander Award, Masao Horiba Award, and Fissan-Pui-TSI Award for his contributions to aerosol science.

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THURSDAY, MAY, 12, 2022  
11:00AM-11:50AM