

**Underwater mass spectrometry—Calibration issues
for membrane introduction interfaces.**

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It is important to keep mass spectrometer sampling interfaces as simple as possible for deployment in harsh environments. For this reason, membrane introduction has become a common sampling interface on portable mass spectrometers. Membrane interfaces typically negate the need for extensive sample preparation, reduce gas loads on mass spectrometer vacuum pumps and provide an unmatched degree of ruggedness.

Recently, our work has focused on calibrating underwater membrane introduction mass spectrometry (MIMS) systems. The influence that various sampling parameters have on mass spectrometer signal intensities have been difficult to explain by traditional theoretical treatments of membrane interfaces. Data sets will be presented that demonstrate some of these unexpected results and the effects they have on obtaining calibrated MIMS measurements in harsh environments.