

MAXIMIZING ICP-OES WORKFLOW EFFICIENCY WITH THE ALL-NEW AGILENT ADVANCED DILUTION SYSTEM (ADS2). **Longbo Yang**, Agilent Technologies, 6705 Millcreek Drive, Mississauga, ON L5N 8B3, Canada. (longbo.yang@agilent.com)

The effectiveness of an inductively coupled plasma optical emission spectrometry (ICP-OES) analytical run relies heavily on the meticulous manual tasks executed by the analyst. Among these critical tasks are the preparation of calibration standards and sample dilution prior to the run. These processes can be labor-intensive and time-consuming, and carry the risk of introducing contaminants and errors, potentially compromising the quality of the results. Additionally, samples that are identified to be overrange in concentration during the analysis would require further dilution, which can be disruptive to the analyst's daily workflow. To help labs reduce sample turnaround time and minimize cost per analysis, Agilent introduces the Advanced Dilution System (ADS 2). This is an online dilution system, purpose-built for Agilent ICP-OES (and ICP-MS) instruments. The ADS2 can automatically prepare multipoint calibration standards from a single stock standard, dilute samples before analysis by a prescribed factor, and dilute and remeasure sample immediately when sample concentration overrange is detected. Online autodilution and automatic calibration standards preparation not only reduce manual labor but also avoid the risk of introducing human error and contamination during sample preparation. The ADS2 provides valuable support for less experienced operators in conducting routine analyses, streamlines the ICP-OES workflow and ensures accurate analytical results.