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EXAMINING THE BOUNDARIES OF INSTRUMENT-TO-INSTRUMENT CALIBRATION TRANSPORT

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Generation of precise, accurate, and robust calibration models for spectroscopic methods of analysis can be time-consuming, expensive, and sometimes difficult to achieve. For these reasons, efforts have been made to find ways in which the calibration from one instrument can be moved to another with minimal performance reduction. A slight shift in nomenclature from the common term calibration transfer to the term calibration transport is used here to help resolve the subtle difference between two means of moving a calibration from one instrument to another. The former term denotes a transfer procedure that includes mathematical manipulation of the calibration data via some determined transfer function, whereas the latter term does not.

Todays generation of process and laboratory FTNIR analyzers is capable of not only achieving calibration transfer, but also calibration transport often without the need of slope or bias adjustments. Several studies are used to examine the boundaries of the extent to which calibration transport is achieved in the refining industry. Data collected on multiple on-line and laboratory FTNIR analyzers located in multiple countries are considered, and the ultimate limitations discussed.