## Utilize NIST/TDE in Process Design using Aspen Plus

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When developing process models, one of the most difficult challenges has been to collect, evaluate, regress, and estimate thermo-physical property parameters for the various chemical species involved. With traditional methods, property evaluators spend weeks or months collecting data from various sources, then manually evaluate them and fit them to models. This approach is extremely slow and costly, and often fails because the evaluator cannot keep pace with industry requirements for new chemicals and properties.

In this demonstration, we use the process simulator Aspen Plus to show the integrated NIST/TDE workflow and how it impacts the process design practice. Experimental data points are easily gathered for the selected system, and data consistency checks are performed on-demand. These data points can be directly used in the Aspen Plus data regression module to tune model parameters. With the tuned parameters, the system has different phase equilibrium behavior (such as VLE) than those without the tuned parameters. This will have large impact on column design, which will be demonstrated during distillation column simulation.