

## New Procedures for Articles Reporting Thermophysical Properties

The *Journal of Chemical & Engineering Data*, along with other journals in the field, established a collaboration with the Thermodynamics Research Center (TRC) of the National Institute of Standards and Technology (NIST) in 2009 for the purpose of ensuring the quality of published experimental data. In a joint statement,<sup>1–5</sup> the editors of the five journals involved set out the rationale for the cooperation in terms of helping to ensure that authors and reviewers were made aware of any previously published literature values for the properties and systems in question. The process involves NIST “capturing” the new experimental data, comparing it against existing values in the NIST data archive, and providing a report that (a) lists relevant literature sources and (b) highlights any obvious discrepancies in the new data.

To streamline the process and further enhance the quality of published articles, we have now introduced some changes to the way that the NIST cooperation is implemented. As of December 1, 2011, the process has been split into two steps. First, upon submission of an article, NIST will provide a literature report to the authors and reviewers containing relevant references from the NIST data archive (<http://www.trc.nist.gov/ThermoML.html>). Second, NIST will provide a data evaluation at the end of the review process immediately prior to acceptance of the article. This data evaluation will compare the reported experimental data with that existing in the NIST data archive and highlight any unexpectedly large discrepancies such as those arising from typographical errors. To facilitate the necessary electronic data capture, the experimental results and their uncertainties must be tabulated in the way described in the Author Guidelines. A key feature of the new requirements is that tables must be self-contained and must include the uncertainties of all reported quantities. In addition, we have incorporated new standards relating to the description of chemical samples, and we encourage authors to present details of their samples in an easily readable tabular form. To assist authors, a large number of example tables have been prepared by NIST and are available at <http://trc.nist.gov/JCED-Support.html>.

The new procedures, which are mandatory, will speed the review process and relieve NIST of the task of capturing data from papers that are ultimately not accepted for publication. The regulations relating to the description of chemical samples and the rigorous reporting of experimental uncertainties will further enhance the already high quality of articles published in the *Journal of Chemical & Engineering Data*. These same revised instructions have been published by the other four journals involved in the collaboration with NIST.

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