Correlation–gas chromatography is proving to be a powerful analytical technique that can be applied to the measurement of vaporization enthalpies and vapor pressures of liquids, both hypothetical (sub-cooled) and/or otherwise. This technique has been applied to the measurement of vaporization enthalpies (and vapor pressures) of the n-alkanes from C21-C38, complex fuels, and tautomeric and isotopically substituted mixtures. The technique of correlation–gas chromatography as applied to these measurements will be discussed and when possible, the results will be compared to existing thermochemical data.