Friction coefficients in cold forging: A global perspective

Worldwide, at least twenty different tribological tests have been proposed for the empirical determination of friction coefficients in cold forging processes. Due to the varying test setups, means of measurement, and level of abstraction, the comparability of the outcomes is, however, disputable. Within this work, six established test principles are compared using identical tribological systems. Large differences between the empirically determined friction coefficients are observed but can be explained under consideration of the respective tribological loads. Additional investigations of an extrusion process reveal that friction models also have to take into account the varying local thickness of the lubricant film.