

Slurred Speech in Biophysics

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ABSTRACT

One of the important factors in scientific publication is the transition of the concepts in the forms of words and terms. The proper use of the “language of science” is an aid to clear and effective communication in science. Biophysical sciences encompass all thermo-chemical and thermo-physical property measurements and calculations on biochemical and biological systems. A great deal has been written on the standards in units, reactions experimental design, analysis, data collection, and technical calibration of used instruments in bio-thermodynamics. The dark side of this subject is undermining the importance of terminology and nomenclature which attracted less attention in scientific literatures. We collected all documents having the “protein” and “thermodynamics” in title, abstract or keywords in the Scopus website. Search results were sorted by received citation. The abstracts of 2000 high-cited articles were downloaded and the frequencies of all words were counted. Top mostly-used thermodynamic terms were selected for further study. Some most-used terms are as; folding, stability, transition, native, conformation, unfolding, stable, domain. We noticed that there is no unique definition for these high frequent terms and the meanings of these terms are highly dependent on the methods used in the article. The main failure of biophysics and related fields may be the misusing of the terms. This led authors and readers to have their own perceptions of the publication that may completely controversial. It seems that there is urgent need to shed light on the dark side of bio- thermodynamics by precise definition of specific terms.

Keywords: Biophysical sciences; Thermodynamics; Protein; Folding; Stability