**1)**

1. **Forward**

In the two books that I wrote it was necessary to review many isotherm analyses and also present the quantum mechanics and ESW hypothesis. I discovered when others referenced these books that invariably the authors did so to quote a book that had the BET equation clearly written out. That was a mistake on my part, since in almost every incidence in the book where the BET is mention, I recommended against using it. Naturally, these warning statements were ignored and I suspect they did not even read the book. (Thanks for the reference anyway.) I relate up front here in the forward my opinion of the BET. It is a terrible “theory.” However, I acknowledge the great service to science, which Brunauer (who was a friend of Fullers,) Emmitt (whom I knew,) and Teller (who was my boss I never met) as well as that by the Demings, have provided. It is only with hindsight and knowledge of quantum mechanics (QM) and Excess Surface Work (ESW,) unavailable to them, that I can write this.

In this report we tell how the BET and other isotherm analysis referred to as the “Henry’s Law” class of isotherms are disproven. There are other reasons not to use them, but that is getting too far off track of the main purpose of this writing. That purpose is to present the QM and ESW hypotheses of physisorption.

With regards to these hypotheses, the derivations are, yes, tedious but necessary. The road to these derivations has also been tedious and frustrating for some. The names include Polanyi, DeBoer-Zwikker and Fuller. By the time he died, Fuller had seen nearly the full development, including the QM derivation of the full isotherm fits and mesopore analysis, and knew he was on the right track. Getting any mention of an alternative to BET met with stiff resistance and outrageous illogical arguments[[1]](#footnote-1) for rejection. Dubinin contributed, perhaps unknowingly, with his “thermodynamic criterion,” which was likewise ridiculed, but never-the-less correct.

Such has been the problems, which is I wrote the first edition of my book. When Elsevier contacted me to write the book, I took the opportunity to get the knowledge out to the public. It was the only way I could get my developments up to that day into print. Some things have change since then, with a firmer understanding of microporous and mesoporous calculations and a clearer understanding of the importance to have both the χ-plot and the Δχ-plot as well as the log-law-plot which I believe that you will find interesting.

In the forward to the first edition, I warned graduate students of the unpopularity of the ideas expressed in the “modern hypothesis,” and be aware of the unwelcome reception of these ideas. I now recommend that if challenged tell your major professor to read this report.

James Condon

1. Illogical arguments include not just hominid abusive, but strawman (misquoting a statement and then disputing it,) incorrect mathematics such as, for the function (1+a/A)^(A/a) if A is very large than a/A goes to 0 and this function goes to 1. When any Freshman calculus student would know this is, by definition the function **e**. Another one given by an editor was, “These [6 publications] cannot be right since they conflict with my book. Go buy it and read it.” That is not a very nice sales pitch. Unfortunately, I had already bought a copy. The most favored criticism has been, “Everyone knows this is incorrect.” Really? [↑](#footnote-ref-1)