《量子物理与材料化学杂志》

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Article 9. The Principal of Thermodynamics: Specific Heat Capacity and Material/热力学原理：比热容与材料

Author: Liu Huan(1983-), Master of Science (First Class Honours, 2009), The University of Auckland.

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My article further discusses the 'heating' scenario: when the receptor materials is heated by external thermal sources, the thermal energy increases in the receptor materials [2]. Inside the space of receptor molecules (or atoms), the effects of stable constructive interference between the external thermal source of electromagnetic waves and the electromagnetic waves emitted from the receptor molecules (or atoms) becomes the major forces of accelerating the revolution/rotation motion of receptor molecules (or atoms) (Please go to Figure 1). Consequently, the most efficient 'heating' process is the electromagnetic waves from external thermal sources, which have the same frequency as the electromagnetic waves emitted by the molecule motion of receptor objects and show similar amplitude of vibration to the electromagnetic waves emitted by the molecule motion of receptor objects (the amplitude of vibration between these two waves should not show large variation), is able to accelerate the revolution/rotation motion of receptor molecules (or atoms) most effectively. In this definition, the acceleration rate of molecular angular velocity becomes the first indicator of specific heat capacity of the receptor objects. According to the spectrum line experiment, 'the frequency of light emitted by each element corresponds to the same frequency of light absorbed.' Consequently, this experimental conclusion further supports my thermal theory proposed [4].

However, the thermal energy, in terms of temperature ascending or descending capacity, varies among different frequencies of electromagnetic waves. Consequently, if the frequencies of electromagnetic waves emitted by the molecule motion of receptor objects is the frequencies leading to higher thermal energy, in terms of higher thermal energy caused by temperature change per unit, then the specific heat capacity of this receptor object is higher! In this case, the efficiency of specific heat capacity is the not linear relationship with the increased frequency of electromagnetic waves emitted by materials (not received by materials), due to the buffering effects of dark matter [3]. Similarly, the increasing intensity of received electromagnetic waves is not the linear relationship with the specific heat capacity of the receptor objects as well due to different destructive phases in dark matters. This means that the specific heat capacity can show the 'jumped' and non-continuous relationship with the received intensity of electromagnetic waves in statistics when it reaches the critical values

differentiating each destructive phases in dark matter, so that the past numerical modeling based on the linear regression analysis would be the inexact ones for the chemical engineering of new materials, especially under extreme conditions (review paper to be continued in the coming article next).

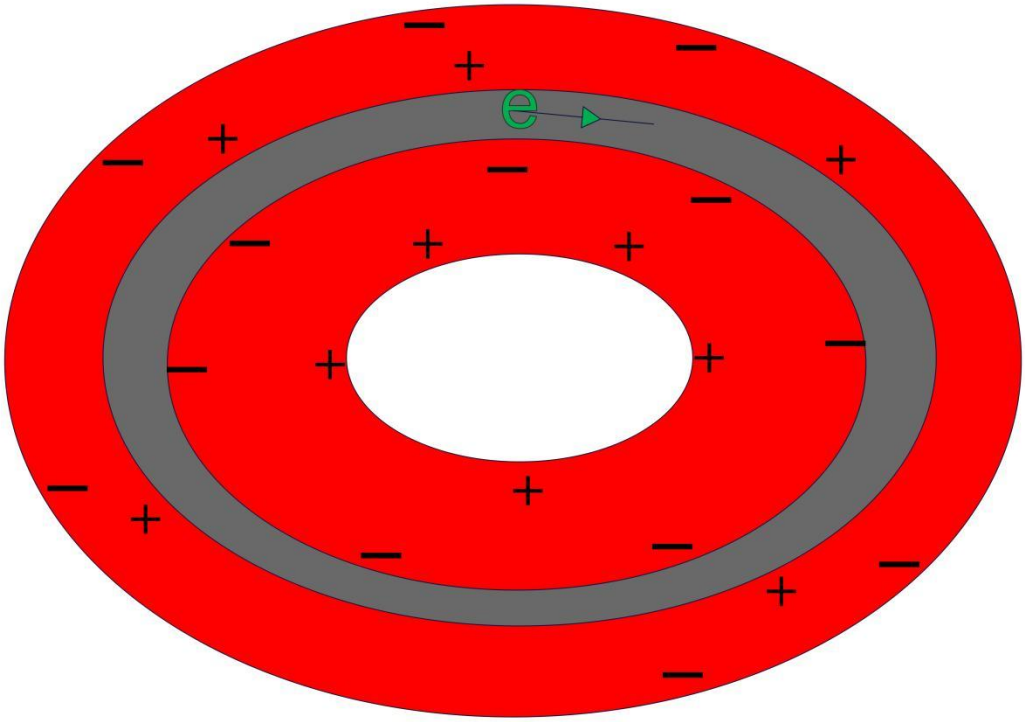

Fig 1. The red zone represents the constructive interference zones of two electromagnetic waves; The grey zone represents the destructive interference zones of two electromagnetic waves; The green ‘e’ represents the electrons inside the atom or molecule. This simple graph indicates the electron accelerating process inside the atom or molecule spaces due to the the effects of stable constructive interference between the external thermal source of electromagnetic waves and the electromagnetic waves emitted from the receptor molecules (or atoms). Please note: both “+” and “-” symbols represent the magnetic poles whose direction is vetical to the negative and positive electric poles respectively. The boundary lines between destructive and constructive interference zones would also become the equipotential lines, forming the electric/magnetic shielding effects inside an atom, which is the reason of atomic light reflecting capacity [5].

Please note: This is the revised materials in book “Proceedings for Degree of Postgraduate Diploma in Environmental Science (3rd Edition).” published in 2016. Revised on 31/12/2020; Secondly revised on 12/06/2021; Thirdly Revised on 09/10/2021.This journal article is previously published as: Liu Huan. (2021).The Principal of Thermodynamics: Specific Heat Capacity and Material. Journal of Environment and Health Science (ISSN 2314-1628), 2021(02)., which is converted into Journal of Quantum Physics and Materials Chemistry (ISSN2958-4027) . Both Journals belong to the same publisher, Liu Huan. The previous journal article is closed to the public, but the previous reference is still valid.Latest revised on 18/05/2023;26/05/2023;21/11/2023;26/08/2024.

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