Review Form 1.6

Journal Name:	**Asian Journal of Advanced Research and Reports**
Manuscript Number:	**Ms_AJARR_94937**
Title of the Manuscript:	**Calculation of Bohr's radius of any atom on the basis of Planck constant free equation, mathematical complexities, and atomism.**
Type of the Article	**Original Research Article**

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This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty'**, provided the manuscript is scientifically robust and technically sound.
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PART 1: **Review Comments**

	Reviewer's comment	Author's comment *(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)*
Compulsory REVISION comments	**I reviewed carefully the manuscript by following the concepts and calculations in order to achieve the main formula Eq. (15). In my opinion, the article is not correct in what it proposes since Eq. (15) is only valid for hydrogen-like atoms (hydrogenic atoms) contrary to statement provided by the author (or authors). For instance, let us consider Bohr's model where the centripetal force equates the Coulomb force according to** **m v2 k Z e2** **= , (1)** **ai a 2** **i** **where k = 1/(4π ϵ0). The energy binding the electron to the nucleus in the hydrogen-like atom assumes the form** **1 k Z e2** **ξi = T + V = m v2 − . (2)** **2 ai** **On the other hand, in Bohr's model, the angular momentum L is given by** **h** **L = m v ai = n ℏ, ℏ = . (3)** **2π** **So, the substitution of from (3) into (1) gives straightforwardly the result** **n 2 h 2ϵ0** **ai = π m Z e2 . (4)** **In the meanwhile, the substitution of from (3) in (2) leads us to** **1 k Z e2** **ξi = − . (5)** **2 ai** **Therefore, the energy to unbind an electron from this hydrogen-like atom is positive and equal to | ξi | . After combining Eqs. (4) and (5) it is possible to obtain** **n h** **ai = . (6)** **π 8m ξi** **This is equation (9) of the manuscript. Assuming n = 1 and Z = 1 we will get from Eqs. (4) and (5), the Bohr radius and the energy for the hydrogen atom; i.e.,** **h 2ϵ0 1 k e 2 m e 4** **a0 = = 5.29 × 10−11 m, ξH = ≡ = 13.6 eV, (7) .** **π m e2 2 a0 8ϵ2 h2** **0** **The independence of Planck constant is obtained from Eq. (6) and the right-hand side of Eq. (7), leading us to** **n e2** **ai = . (8)** **8π ϵ0 ξiξH** **Where it corresponds to Eq. (15) of the manuscript. The authors claim that this last formula is useful to describe atom radius not only for hydrogen-like atoms but also for ionized atoms once the average ionisation energies ξi are given. However, I must specify that this statement is not correct at all due to the fact that Eq. (15) of the manuscript has its origin from Bohr's model describing hydrogen-like atoms.**	
Minor REVISION comments		
Optional/General comments		

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PART 2:

	Reviewer's comment	**Author's comment** *(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)*
Are there ethical issues in this manuscript?	*(If yes, Kindly please write down the ethical issues here in details)*	

Reviewer Details:

Name:	**Roberto Ivan Cabrera Munguia**
Department, University & Country	**Universidad Autónoma de Ciudad Juárez, México**