

Review Form 1.6

Journal Name:	Physical Science International Journal
Manuscript Number:	Ms_PSIJ_89071
Title of the Manuscript:	The Role of Dust charging and asymmetric Ion flow on the Dust Lattice Mode in Complex Plasma
Type of the Article	Original Research Article

General guideline for Peer Review process:

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. To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

(<https://www.journalpsij.com/index.php/PSIJ/editorial-policy>)

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		
Minor REVISION comments		
Optional/General comments	<p>In this paper, The authors have presented an elaborate discussion on the formation of wake potential along with Yukawa potential in complex plasma and discussed the strength of interaction for a vertically placed dust subsystem, as a characteristic of ion flow speed and grain size. The observations can be summarized as follows: (a) The effective plasma Debye length surrounding the dust gets distorted and reduced in presence of dust charge fluctuation in terms of ion flow speed and particle size. (b) The strength of both Yukawa and wake potential is reduced with increase in grain size, in terms of electron/ion attachment frequency $P(Q)$. The corresponding mode of vibration also decreases with increase in grain size. This implies a size dependent transition in crystal phase often observed in nano crystal. (c) The type of interaction is found to be in a mixed phase of Wake and Yukawa in subsonic regime of plasma flow. In this regime the frequency of vibrational mode shows an anomaly with gradual decrease in ion flow speed M. This implies an ion flow induced anomalous transition in crystal phase, a well known phenomena in solid state physics [17]. The supersonic regime is found to be in Yukawa dominating phase. 11 UNDER PEER REVIEW (d) The study is expected to play a significant role in controlling the phase behavior and diffusion phenomena in complex plasma in absence of magnetic field.</p> <p>The manuscript is clear, concise, reasonably self-contained presentation of the material and Figs. are clear, giving adequate reference to related work, the title is appropriate and the abstract is adequate for verbatim reproduction in abstract journals. This work is good. So I recommended this work to publish in Physical Science International Journal.</p>	

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PART 2:

	Reviewer's comment	Author's comment <i>(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)</i>
Are there ethical issues in this manuscript?	<i>(If yes, Kindly please write down the ethical issues here in details)</i>	

Reviewer Details:

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