



SDI Review Form 1.6

Journal Name:	Physical Science International Journal
Manuscript Number:	Ms_PSIJ_21553
Title of the Manuscript:	Light amplification and scattering by clusters made of small active particles: the local perturbation approach
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:

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PART 1: Review Comments

	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>
<u>Compulsory</u> REVISION comments		
<u>Minor</u> REVISION comments	<p>In this paper, the light amplification and scattering by the cluster of small active particles is studied analytically and numerically with the help of the local perturbation method and phenomenological laser theory. It is shown that light amplification is possible even for one small particle, and that the amplification is more profound when the light frequency nears the frequency of the cluster's morphological resonance. Theoretical discussions are supplemented by numerical results for scattering by clusters which particles positioned at ordered and at slightly disordered positions. This is an interesting paper. I would recommend the publication of this manuscript after the following modification.</p> <p>1. In this paper, the light scattering by the ordered and slightly disordered clusters of small active particles has been discussed. It would better to provide more discussions or information for scattering by disordered clusters which particles are positioned further than 0.1L from the nodes.</p>	<p>Agree with the comments. I have put additional paragraph (highlighted in yellow) at the end of the the paper just before the Conclusions.</p> <p>The added paragraph is:</p> <p>When the allowed distance from the particles to the nodes increases (while the period is fixed or also increases), the effective size of the cluster grows. As the result, the interaction between the particles in the cluster will, in average, drop down. In addition, the effective permittivity of the cluster will decrease, reducing the reflection of the light inward from the surface of the cluster. Under these conditions, the lasing will become much more difficult.</p>
<u>Optional/General</u> comments		