



SDI Review Form 1.6

Journal Name:	Physical Science International Journal
Manuscript Number:	Ms_PSIJ_27184
Title of the Manuscript:	Magnetic properties of a quasi-two-dimensional Heisenberg antiferromagnet -RbCrF4
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.

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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	<p>This paper reported a preparation of a quasi-two-dimensional Heisenberg antiferromagnet α-RbCrF₄ and made a characterization by XRD and SQUID. The experimental results are not believable and explanation is not reasonable.</p> <p>“They believe that the crystal system is orthorhombic and that the lattice constants are $2a \approx 2b \approx 7.348$ and $c = 6.442$” only referred some documents (refs. 16 and 17) and lack the additional experiment. “The superstructure has not yet been determined, only denoted the fundamental peaks using the indices shown in Fig. 2(a) based on the superstructure reported in Ref. 16.” This points also lack the strong evidence. So I think they should do experiment to confirm this such as EXAFS or XANFS experiment.</p> <p>“To further purify polycrystalline α-RbCrF₄,....” This part ,the author do not explain the difference below 15K.</p>	<p>We acknowledge the referee's effort to review our manuscript [Ms_PSIJ_27184]. We admit referee's comments to be reasonable and valuable.</p> <p>As referee's comments, we withdrew the discussion about the superstructure of RbCrF₄ because of no refinements. Furthermore, the splitting of XRD peak profiles in the inset of Fig. 2(a) was also withdrawn.</p> <p>However, the basic structure consists of a TlAlF₄-type structure and the XRD profiles agreed well with the $Pmmn$ ($2a \times 2b \times c$) space group. Therefore, a good two-dimensionality is expected in RbCrF₄. This modified part is lines 109-113 in the revised manuscript.</p> <p>As referee's comments, we explain the difference below 15 K in lines 146-153 in the revised manuscript. Furthermore, we added the magnetic susceptibility in the several samples using the usual method and RS method in Fig. 2(b) in order to explain impurity-induce weak ferromagnetic moment.</p> <p>As mentioned above, we withdrew the discussion about the superstructure of RbCrF₄ but the basic structure consists of a TlAlF₄-type structure and the XRD profiles agreed well with the $Pmmn$ ($2a \times 2b \times c$) space group. A TlAlF₄-type structure</p>



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	<p>In the abstract and the conclusion, the structure of a -RbCrF_4 was not determined, why is “antiferromagnet a -RbCrF_4” wrote into your title?</p> <p>Based on the above-mentioned reviews, there are not the enough new thing in this paper</p>	<p>shows a good two-dimensionality.</p> <p>In one- or two-dimensional antiferromagnets, a broad magnetic susceptibility peak always appears theoretically and experimentally: it is common sense in our fields. Furthermore, several previous theoretical investigations strongly supported that RbCrF_4 consists of two-dimesnional Heisneberg antiferromagnets.</p> <p>Therefore, we did not change the title.</p> <p>We believe that we have sincerely replied to the comments of the referee in the revised manuscript and that the present revised version of the manuscript is now worthy of publication as <i>Regular Articles</i> in <i>Physical science international journal</i>.</p>
<u>Minor</u> REVISION comments		
<u>Optional/General</u> comments		