

Acknowledge editing support

International publication guidelines such as [ICMJE guidelines](#) state that all non-author contributions, including editing, should be acknowledged.

If you are satisfied with the quality of editing, please acknowledge the editing contribution by adding the following line in the acknowledgements section:

We would like to thank Editage (www.editage.cn) for English language editing.

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Scientific Editing Report

Dear Author,

This document contains an assessment of the manuscript in terms of its language and presentation, content, and submission readiness. Where relevant, I have also provided recommendations for improving the manuscript. Should you have any questions on the report, do let me know.

Best regards,
Mary
Editor, Physical Sciences

Table of Contents

LANGUAGE AND PRESENTATION	3
Overview	3
Organization and flow	3
Formatting.....	5
CONTENT REVIEW	6
Title, Abstract, and Keywords	6
Literature Review and Research Rationale	6
Study Design or Methodology	7
Results and Statistical Analyses	7
Discussion and Conclusion.....	8
SUBMISSION CHECKLIST	9

LANGUAGE AND PRESENTATION

Notes from the Language Editor

Overview

The layout of the manuscript (Abstract, Results and Discussion, Conclusions) was satisfactory, and I was able to format it using the template provided by *Chemical Science*. Revisions were made primarily to improve readability and the flow of logic, and the heaviest editing was done in the Introduction and Results and Discussion sections. The synthetic pathways discussed in the Introduction were a bit difficult to follow, so please review my edits to ensure they accurately convey your intended meaning. Some parts of the Results and Discussion were repetitive, so I revised these to enhance readability. The most intensive editing was done in the section on X-Ray crystallography. These revisions were made for clarity, so please go through them to ensure they are satisfactory.

Organization and flow

Abstract. The Abstract states the main objective of the study, which is to synthesize and evaluate acetamidinium salts that could serve as replacements for acetamidinium chloride. It also includes the study's primary findings, which are that salts with three-dimensional layered structures are hygroscopic, while salts with two-dimensional layered structures are not.

Recommendations:

- Elemental analysis and mass spectrometry (MS) are listed as characterization methods in the Abstract, but there is no mention of either type of analysis in either the Results and Discussion or Conclusions section. Please either (a) remove mention of elemental analysis and MS from the Abstract, or (b) add the results of the analyses and your interpretation of them to the Results and Discussion section and update the Conclusions section accordingly.

- The Abstract would be made stronger by addition of a statement that emphasizes the importance of this work. Acetamidinium chloride is inconvenient to use, because it is hygroscopic. How severe is this impediment to scientists in research and industry, and how do the findings of your study remedy this problem?

Introduction. Overall, this section is organized well, and it provides adequate context for the reader to understand the need for alternatives to acetamidinium chloride. My revisions are centered on improving readability and flow, so that the reader can more readily understand how the various acetamidinium salts are synthesized. Items that require the authors' attention are indicated with comments in the manuscript.

Methods. Please check with the journal regarding a clearly defined Methods section. I read several articles published in *Chemical Science* that do not contain a Materials and Methods section. Rather, the experimental work is discussed more generally in the Results and Discussion section. The present manuscript is organized in this manner. Revisions were made to improve clarity, and areas requiring attention from the authors are indicated with comments in the manuscript.

Recommendations:

- Please state explicitly how hygroscopicity (%) is calculated. It is difficult to determine how the authors obtained the experimental values from the description given in the text.
- If elemental analysis and mass spectrometry were performed, please add these details.

Results. The results of the study are clearly stated both in the Results and Discussion section and the Abstract. Acetamidinium salts with three-dimensional layered structures are hygroscopic, while salts with two-dimensional layered structures are not. Revisions were made to improve readability and logical flow. Items that require additional input from the authors are indicated with comments in the manuscript.

Discussion and Conclusion. The importance of the study's findings is not explicitly stated, and the Conclusion is quite brief.

Recommendations:

- Please add a statement to the Conclusions section that explicitly states why your findings are novel and important, e.g. you have identified several acetamidinium salts that may help scientists circumvent the inconvenience of using acetamidinium chloride.
- You have also identified and explained the physicochemical properties that underlie hygroscopicity in these compounds. If any or all of the salts you characterized might reduce manufacturing costs, mention of this would strengthen this section.

Formatting

The manuscript has been formatted for submission to *Chemical Science* using the template from the journal's website. The in-text citations have been formatted per the journal's requirements. The Reference list was not included with the original manuscript, so I was not able to format the Reference section. The tables and figures were not included, so I was not able to edit them. However, I have placed table titles and figure captions in the locations specified by the authors.

Recommendations:

- Some of the in-text citations and figure references were written in purple font. I have not changed font color for these, so please make sure that font color is consistent in each section prior to submitting the manuscript.
- I placed table titles and figure captions in the locations specified by the authors; however, the final titles, captions, and in-text descriptions require input from the authors. Please complete the titles and captions when the corresponding tables and figures are added to the manuscript.
- Please check with the journal regarding the maximum number of figures allowed. Some of the figures could be consolidated to reduce the overall count. Places where this may be possible are indicated with comments in the text.

CONTENT REVIEW

Notes from the Scientific Reviewer

Title and Abstract

The title clearly states that acetamidinium salts were synthesized and their properties were investigated. The term “novel” was added to highlight that new salts were produced in this study. The abstract appropriately summarizes the study. The motivation of the study, range of materials investigated, and the main findings with respect to the hygroscopic properties were clearly described. The technical content of the abstract was appropriate.

Recommendation 1. The title could be improved by including some mention of the hygroscopic properties, as this was the main motivation for the work. For example, “Synthesis and properties of novel acetamidinium salts with reduced hygroscopy”

Recommendation 2. As the abstract is well within the recommended word count, I suggest including some more details to highlight the significance of the study. For example, what advantages do acetamidinium salts with low hygroscopy offer to the field? What specific applications/fields could be benefited? How do the hygroscopic and thermal stabilities of the new salts compare to acetamidinium chloride?

Literature Review and Research Rationale

In the introduction, the authors discussed the motivation for the study well and highlighted the gap in the knowledge that the study is trying to fill. The background regarding the uses and limitations of acetamidinium salts was described well with reference to recent and relevant literature. The number of references is thought to be appropriate for the length of the paper. The results were discussed well in reference to the literature.

Recommendation 1. Please ensure that all relevant studies have been cited and that your own previous studies are only cited if they are highly relevant to this study. While it is common to cite old seminal papers, it is preferable that most of the references are new, in order to indicate that the topic is currently active and interesting to the field. In addition, please ensure that you cite a balance of papers from different research groups/countries.

Study Design or Methodology

The design of the study was logical and well described in the paper. A wide range of acetamidinium salts were investigated, with both 2D and 3D structures, which enabled the comparison of a range of hygroscopic properties. The chosen methods for evaluating the properties of the salts were appropriate as they are well-known and accepted in the field. The specific methodologies and experimental techniques were not presented (which is acceptable in such a short paper), but were referenced appropriately.

Recommendation 1. Although the methodology was described well, it could be improved by stating a hypothesis and/or clarifying the study design. For example, was it your intention to choose both 2D and 3D structures as you expected them to have different hygroscopic behavior? Why were these specific compositions chosen?

Results and Statistical Analyses

The results were discussed well in reference to the figures and logical conclusions were made. The results were compared well with previous studies and there were no obvious inconsistencies.

Recommendation 1. To increase the credibility of your data, it is advantageous to briefly discuss the reproducibility of your data, and any statistical/data analyses that was performed. This includes placing error bars on the data, discussing the resolution of the measurement techniques, and any standards, reference samples, and controls used. For example, the weight increases used to determine the hygroscopy

are highly dependent on the resolution of the balance used and the conditions under which the samples were stored. How many samples were measured in each case?

Recommendation 2. Any known limitations of the methods used should be briefly stated.

Discussion and Conclusion

The results were discussed well in each section of the Results with reference to the literature. The conclusions section gave a brief summary of the study and the main findings.

Recommendation 1. In contrast to the abstract, which should be a summary of the paper and main findings, the purpose of the Conclusions sections is to highlight the relevance and significance of the study to the field. For example, how is the development of these new salts expected to impact the field? What applications could benefit from these materials? Are there economic, environmental, policy implications of these findings? Are there any limitations of the study or scope for future work?

SUBMISSION CHECKLIST

Journal Scope

Section	Assessment	Comments
The paper can be submitted to the target journal	Yes	The topic of the study fits within the scope of the journal
The study conforms to relevant ethical standards	Yes	The paper seemed to follow all ethical requirements of the journal. However, the authors need to carefully read the policy of the journal before submission.

Journal Requirements

Section	Assessment	Comments
The title page contains the title and all author information, including the complete contact details of the corresponding author.	Yes	The front matter was included as required by the journal.
The paper is in the format preferred by the journal (MS Word, PDF, TeX).	Yes	The paper uses the RSC template provided by the journal and can be submitted in this form.
All figures and tables have been prepared in the correct format and in keeping with the journal's requirements.	NA	Please ensure that the figures and tables are appropriately formatted following the journal requirements.
In-text citations and references correspond to each other and are accurate.	Yes	The references and citations are formatted well.
Citations have been provided where necessary.	Yes	All relevant statements of fact and reference to previous studies have been cited well.

A cover letter has been included with the manuscript.

Yes

The cover letter is appropriate for submission to the journal.

SAMPLE