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Book Name:	Current Research Progress in Physical Science
Manuscript Number:	Ms_BPR_2568
Title of the Manuscript:	Investigation of Phonon Vibrational Modes in Ga, Al, Fe, Co, Ni, and Zn Doped (110)-Oriented PBCO Thin Films
Type of the Article	Book chapter

PART 1: Review Comments

Compulsory REVISION comments	Reviewer's comment	Author's Feedback <i>(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i>
Please write a few sentences regarding the importance of this manuscript for the scientific community. Why do you like (or dislike) this manuscript? A minimum of 3-4 sentences may be required for this part.	This manuscript presents significant insights into the substitution of Cu ions in PrBa ₂ Cu ₃ O ₇ (PBCO) thin films with various metal ions and their impact on phonon vibrational modes. The work is important for the scientific community as it deepens our understanding of how different dopants affect the lattice structure and symmetry of PBCO, which is valuable for advancements in applied superconductivity and materials science. I appreciate the manuscript for its detailed experimental approach and the thorough analysis provided, which offers clear evidence supporting the conclusions drawn. The study's findings are well-supported by Raman spectroscopy data, making it a valuable contribution to the field.	
Is the title of the article suitable? (If not please suggest an alternative title)	<p>The current title, "Investigation of Phonon Vibrational Modes in Ga, Al, Fe, Co, Ni, and Zn Doped (110)-Oriented PBCO Thin Films," is clear and descriptive, effectively conveying the main focus of the study. However, it could be made more concise and impactful by emphasizing the key findings related to the impact of doping on the vibrational modes.</p> <p>A suggested alternative title could be: "Impact of Metal Ion Doping on Phonon Vibrational Modes in (110)-Oriented PBCO Thin Films"</p> <p>This title is slightly shorter and emphasizes the core investigation of the effects of metal ion doping on vibrational modes, which is central to the study.</p>	
Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here.	<p>The abstract of the manuscript is comprehensive, covering the essential aspects of the study, such as the experimental approach, key findings, and their implications. However, a few adjustments could improve clarity and impact:</p> <ol style="list-style-type: none"> Clarify the significance: The abstract could briefly highlight the broader significance of understanding phonon vibrational modes in doped PBCO thin films for materials science or applied superconductivity. Simplify technical details: While the current abstract includes detailed technical terms, simplifying some parts could make it more accessible to a broader audience. Emphasize conclusions: The conclusions drawn from the results could be more explicitly stated, summarizing the impact of each dopant on the PBCO lattice structure. <p>Suggested Revision:</p> <p>This study presents a detailed investigation into the phonon vibrational modes of Ga, Al, Fe, Co, Ni, and Zn-doped (110)-oriented PrBa₂Cu₃O₇ (PBCO) thin films using Raman scattering measurements. The findings reveal how different metal ions selectively replace Cu(1) or Cu(2) ions, breaking the crystal symmetry and inducing local disorder in the lattice. Notably, trivalent ions (Ga, Al, Fe, Co) tend to replace Cu(1) in the Cu-O chains, while divalent ions (Ni, Zn) prefer the CuO₂ planes, significantly affecting the Raman-active modes. These insights deepen our understanding of doped PBCO materials, with potential implications for optimizing their properties in applied superconductivity and materials science.</p> <p>This revised abstract maintains the key points but presents them more concisely and with a slightly broader perspective.</p>	
Are subsections and structure of the manuscript appropriate?	The structure of the manuscript appears to be well-organized, with clear subsections that align with the standard format of scientific articles, including Introduction, Materials and Methods, Results and Discussion, and Conclusions. However, here are a few suggestions for improvement:	

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	<ol style="list-style-type: none"> 1. Subsection Titles: Consider making the subsection titles more descriptive. For example, instead of just "Results and Discussion," it could be "Results and Discussion: Impact of Metal Ion Doping on Phonon Vibrational Modes." 2. Combining Redundant Subsections: If there are any subsections that feel repetitive or overly specific, they might be combined for conciseness. For instance, if multiple subsections discuss the impact of different dopants but share similar conclusions, they could be integrated into a single, more comprehensive section. 3. Clarifying Methodology: The "Materials and Methods" section could benefit from additional subheadings to clearly separate different experimental techniques or processes used in the study. This would improve readability and help readers quickly locate specific information. <p>Overall, the manuscript's structure supports a logical flow of information, but slight adjustments in section titles and organization could enhance clarity and reader engagement</p>	
<p>Please write a few sentences regarding the scientific correctness of this manuscript. Why do you think that this manuscript is scientifically robust and technically sound? A minimum of 3-4 sentences may be required for this part.</p>	<p>This manuscript demonstrates scientific correctness through its rigorous experimental approach and thorough analysis of phonon vibrational modes in doped PBCO thin films. The use of Raman spectroscopy as a primary tool to investigate the substitution of Cu ions is appropriate and well-supported by the literature, ensuring the validity of the findings. The study is technically sound, with detailed methodologies and clear, reproducible results that align with existing knowledge in the field. The authors have carefully correlated their observations with established theories and prior studies, reinforcing the robustness and credibility of their conclusions.</p>	
<p>Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.</p> <p>:</p>	<p>The references in the manuscript are generally sufficient and cover essential works related to Raman spectroscopy and the behavior of phonon vibrational modes in doped PBCO thin films. However, some of the references are somewhat dated, with several key references being over two decades old. While these are foundational studies, it may be beneficial to include more recent research to reflect the latest advancements in the field.</p> <p>Suggestions for Additional References:</p> <ol style="list-style-type: none"> 1. Recent advancements in Raman spectroscopy for thin films: Including more recent papers on the application of Raman spectroscopy to thin films, particularly in high-temperature superconductors, would be valuable. 2. Current studies on doped PBCO or similar materials: Incorporating studies that have been published in the last 5-10 years on the effects of different dopants in PBCO or similar superconducting materials can help demonstrate the relevance of this work within the current scientific landscape. <p>These additions would help ensure the manuscript is up-to-date and aligns with the latest research trends .</p>	

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<p>Minor REVISION comments</p> <p>Is the language/English quality of the article suitable for scholarly communications?</p>	<p>The language and English quality of the article are generally suitable for scholarly communication. The manuscript is written in a clear and concise manner, with technical terms appropriately used and explanations provided where necessary. However, a few minor revisions could enhance readability:</p> <ol style="list-style-type: none"> Simplify Complex Sentences: Some sentences are quite long and could be broken down into shorter sentences to improve clarity. Consistency in Terminology: Ensure that technical terms and symbols are consistently used throughout the manuscript to avoid any confusion. Grammar and Syntax: While generally strong, a careful proofreading to catch any minor grammatical errors or awkward phrasing would be beneficial. <p>Overall, the language quality is strong but could be polished further to ensure the highest standard of scholarly communication.</p>	
<p><u>Optional/General</u> comments</p>	<ol style="list-style-type: none"> Overall Quality: The manuscript presents a well-conducted study with valuable insights into the impact of metal ion doping on phonon vibrational modes in PBCO thin films. The research is thorough, and the findings are clearly articulated, making a significant contribution to the field of materials science and applied superconductivity. Scientific Rigor: The study is scientifically robust, with a sound experimental design and appropriate use of Raman spectroscopy. The data is well-analyzed, and the conclusions are logically derived from the results, demonstrating a high level of technical competence. Structure and Organization: The manuscript is well-structured, following the standard format for scientific papers. However, minor improvements in subsection titles and combining redundant sections could enhance the flow and readability. References: While the references are comprehensive and cover foundational works, the inclusion of more recent studies would strengthen the manuscript by reflecting the latest developments in the field. Language and Clarity: The manuscript is generally well-written, with clear and precise language. A few minor revisions to simplify complex sentences and ensure consistency in terminology would further improve the readability and quality of the text. Title and Abstract: The title is descriptive but could be made more concise and impactful. The abstract is comprehensive but could benefit from a slightly broader context to emphasize the significance of the findings. <p>Overall, the manuscript is of high quality and would benefit from minor revisions to enhance clarity, update references, and improve the flow of the text.</p>	

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

Reviewer Details:

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