

Checklist of Paper and Thesis Writing

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Item	Requirement & Suggestions
Start writing	Do not start writing a paper after you finish all the studies. Instead, start writing in your mind when you start the studies, and make changes along the way.
Template	You can get the templates of the manuscript, the cover letter, and the reviewer response letter from ASLers and me or download from the journal website.
Consistency	<ol style="list-style-type: none">1. If you use one word, just keep using it. For instance, do not use “heterojunction” and “heterostructure” in one paper. They are both right but just use one.2. Use the same curve color set for a series of samples in one paper.3. Do not use “Fig.” in one place and “Figure” in another.4. Tense of the verb has to be consistent.
Abstract	<ol style="list-style-type: none">1. Include a brief motivation and describe highlights more detailedly.2. For key results, provide numerical results. Do not just say “much improved performance”.3. Different journals have different maximum numbers of words. Do not exceed the maximum by too much and do not fall short by too much. For instance, if one journal says that the maximum number of words is 200, do not get over 220 and do not fall below 150.
Sentences	<ol style="list-style-type: none">1. Do not use long sentences such as a long sentence followed another long sentence starting with “which”. Use period or semi-colon to break a long sentence into two short sentences.2. Do not forget conjunction such as “and” to connect two sentences separating by comma such as: “We have carried FDTD and APSYS simulation, and performed PLD growth.”
Paragraph	<ol style="list-style-type: none">1. Many paragraphs need to start with a transitioning sentence to describe the purpose of this paragraph. This is common for the introduction and result analysis section. You can use “To XXX” to start those paragraphs. Do not use “In order to”.2. Do not use very long paragraph like over 500 words which causes tiredness when reading.
In this study/work/paper	This sentence is among the most important parts of any paper. Before this sentence, you need to talk about the “pain points” prior to your study such as a lack of research, inferior performance or complex process. This sentence should explicitly state the things you do to address the “pain points.”
Writing versus chatting	Writing is not chatting. Do not use “can’t”, “isn’t”, “don’t”, “doesn’t”. Instead, use the expanded form “cannot”, “is not”, “do not”, and “does not”.
When to use a and the	This is the biggest issue for most. You must use “a” or “the” in front of a countable noun. For nouns which can be countable or uncountable, it is up to you whether to use “a” or “the”. If you are not sure whether a noun is countable or not, just Google.
a or the for common countable nouns	When a normal noun is firstly used, you use “a”. There are two situations. <ol style="list-style-type: none">1. Then if you refer to it later again, you use “the”, such as: “A sapphire substrate was employed to grow the UV LED structure by MOCVD.... After that, the sapphire substrate was examined for its optical transparency.”2. If you refer to another object, you use “another” or “a second”, such as: “A sapphire substrate was employed to grow the UV LED structure by MOCVD.... After that, another sapphire substrate was utilized for the subsequent MOCVD growth.”
a or the for proper countable nouns	If the quantity is only one for certain countable nouns, you use “the” such as: “Akasaki, Nakamura, and Amano were recognized by the 2014 Nobel Prize in Physics.” “ The BAIN alloys are promising for UV LEDs and HEMTs.”
Synonym	Reviewers and readers always appreciate that you have a good vocabulary. Thus, do not keep using the same word. Try to use different and more sophisticated words. You do not know? Just Google to find its synonyms. Three examples:

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	<p>Use: utilize, employ, apply So: therefore, hence, thereby, consequently, accordingly Also: as well, moreover, furthermore, alternatively</p>
Figure	<ol style="list-style-type: none"> 1. The figure resolution must be equal or better versus the figures in papers led by our group. 2. The details of figures such as curves, words, legends, and axes must be large enough to see at 100% Zoom by a normal person. 3. The color of curves must have strong contrast. Hence avoid pink, yellow, and light green. 4. The figure legend cannot block curves or any important information. 5. The figure caption must describe the setting well such as the meaning of different colors. 6. The sub-figures must have “a,b,c,...”. 7. The sub-figures must have the same size and aspect ratio if they are about the similar measurement or simulation of the same or two similar structures. 8. The distance between two objects must be consistent across sub-figures, such as the X-axis and X-axis label. 9. There is a space between “Fig.” and “2”. Do not use “Fig.2”.
Management of references, figure caption, and table caption	<ol style="list-style-type: none"> 1. Do not manually type the reference number and figure number. Use the built-in “Insert Endnote” and “Insert Caption” functions under Word-References. For references, you can also use external software such as Endnote. 2. Mention at least once for any reference, figure, and table you have in the main text.
Copy and paste	<p>Direct copying sentences of other papers including your own papers without “quoting” and citing is viewed as plagiarism. This happens in the introduction most often. Thus, you must not do so. Please write or paraphrase using different language.</p>
Assertive language	<p>Do not use assertive language such as “will”, “definitely”, “absolutely”. Use “could” and “would” instead. Some journals do not allow the use of “first time”, “new”, “novel”, and “record-high”.</p>
Self-citation	<p>Only cite the papers of our group relevant to area of the paper.</p>
Authorship	<p>Only add those who have contributed scientifically and considerably into the authorship. For instance, if someone just did a favor for you to measure one sample, add him/her into acknowledgement but not authorship. If you need to add a student or postdoc from another group into the authorship, that person needs the approval of his/her PI.</p>