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**V4 Seminars for Young Scientists on Publishing Techniques
 in the Field of Engineering Science**


How to prepare a paper for final format

David Bušek, Karel Dušek
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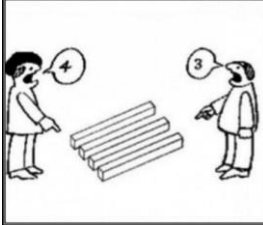
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Journals article formatting



A first, the scientific format may **seem confusing** for the young scientist as every journal has its own requirements


Misunderstanding? → Look out for others, how they do it!




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Before submission



- Do a proper research (sufficient data)
- Find the right journal for your research
 - read (there) articles covering similar topics
- Read the author instructions and format your article according to specific journal requirements (not always strictly necessary)




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Why is manuscript formatting important?



As an editor, I can tell you that queries and manuscript submissions (unfortunately) come in all shapes, sizes, fonts and (I'm not making this up) colors, making it a pain to sift through them. Sometimes the manuscript formatting has been so jarring that I've had to reject them without even looking at the overall idea—mainly because I couldn't find the pitch through the clutter. Editors generally prefer submissions of any kind to be neat and uniform, like an online contacts folder, so they can find exactly what they want as easily as possible.


- Time to publication may be shortened with correct formatting
- Manuscripts that do not meet journal formatting requirements (title page information, abstract structure, reference style) are often sent back to the author without review, up to several weeks after the manuscript was first submitted.

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Requirement for formats of article journals



- Each academic journal has a specific requirement and its own style of formatting:
 - Title (various capitalization methods)
 - Authors (abbreviating)
 - texts
 - figures (and their referencing)
 - tables (and their referencing)
 - references




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Journal formatting requirements




- The requirements for how the manuscript should be formatted for the review process may be different from the format of published articles.

Manuscript  Published paper




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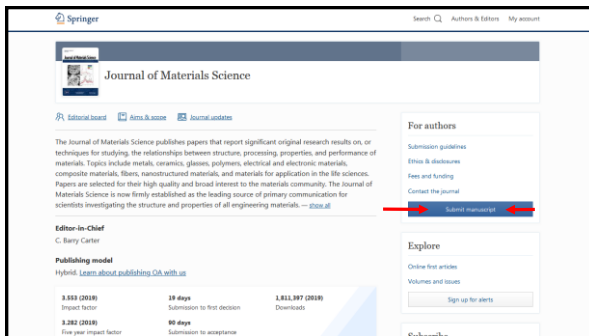
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Formatting


- Arrange texts, paragraphs and figures within a specified margin and position.
- Ensure that references are presented in correct style
- Use the **TEMPLATE** of the journal (if available) for the working document to ensure correct formatting according to the journal standard.
- Make sure that your manuscript looks clean, is easy to read and won't get rejected because of sloppy formatting.



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Springer Journal of Materials Science

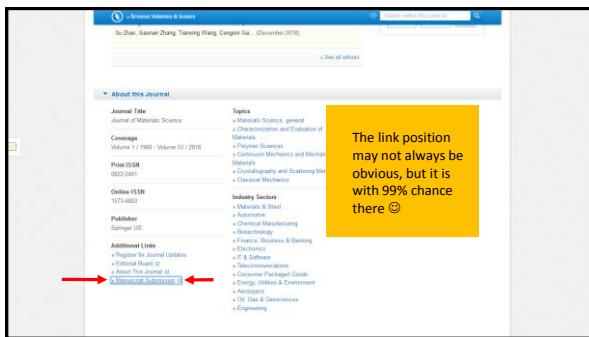
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Submission to first decision

Submit Manuscript (highlighted with red arrows)

8



Journal of Materials Science

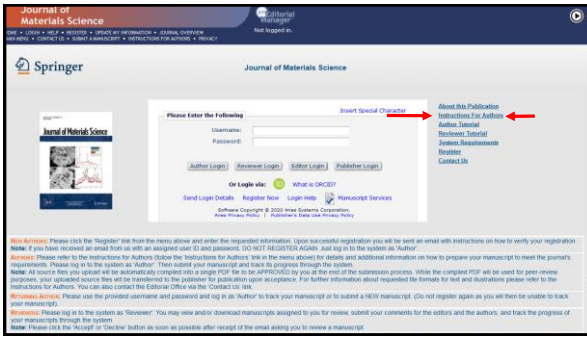
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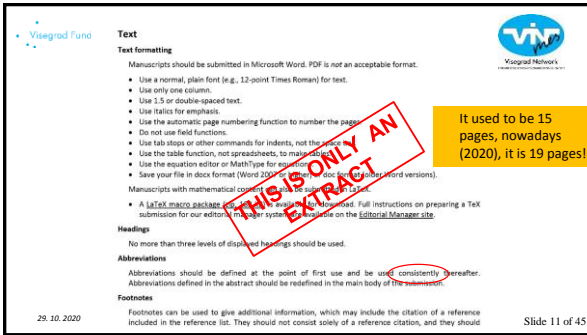
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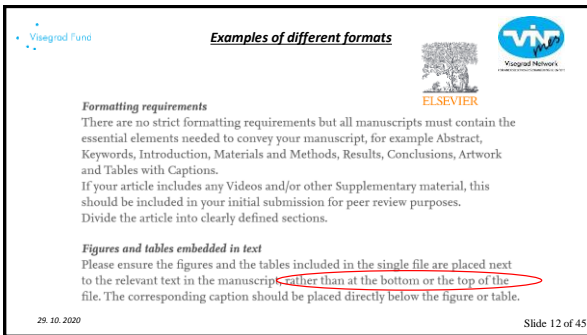
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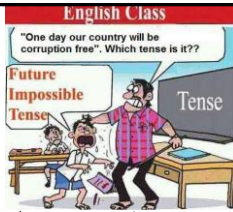
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The journal guidelines don't include any instructions regarding font, line spacing, margins, or other layout issues. How should I format the text of my paper?

- **Consistency and simplicity are essential.** The font should be easy to read, and the layout should be consistent throughout the paper. Times New Roman size 12 font, double line spacing, 1-inch margins, and half-inch indentations at the beginning of each paragraph (using the tab key, **not the space bar**) are widely accepted standards.

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English Class
"One day our country will be corruption free". Which tense is it??
Future Impossible Tense

- Manuscripts should be proof-read and have English language errors corrected before submission as the editor may have to return papers due to poor language usage
- Check misprints, use proofing tools
- If English is not your native language you may want to have your manuscript edited by a **native speaker** or use a **professional language editing service**, where editors will improve the English to ensure that your meaning is clear and identify problems that require your review.
- **YOU ARE THE LAST READER!**

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Editing service
"I'll call you back later, okay? I'm having dinner with my editor."

- **Standard Editing** is a full check of the language, grammar, and sentence structure, as well as a check for correct and natural word usage. (Use this service if you are confident about the structure of your manuscript and are looking for a language and grammar check.)
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Editing service

- Using an editing service is neither a requirement nor a guarantee of acceptance for publication

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Submission checklist

- Read chosen journal requirements (author guidelines / free format)
- Read Submission system guidelines (ScholarOne, Editorial Manager,...)
- Familiarize with possible Peer review outcomes (i.e. how to write rebuttal)
- Create a researcher ID (i.e. ORCID)

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References

HE LOOKS JUST LIKE HIS FATHER!

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References

uniform on the whole assembly and the used temperature profile is usually linear. It is on the contrary difficult to achieve recommended profile of solder paste manufacturer. [Góczy et al. \(2011\)](#) demonstrated that this can only be done by sequential dipping of the PCBs into the vapours.

The Golden liquid is a specific product composed of perfluoropolyether substance (PFPE) and the boiling point may be chosen from the range of 55 °C up to 270 °C ([Schävy, 2014](#)) according to the melting point of the used solder alloy.

According to [Prasad \(n.d.\)](#), the technological disadvantage of the VPS process is the more frequent occurrence of specific defects such as wicking in loaded parts and tombstoning in chip components as [Pisot et al. \(2008\)](#) confirmed. All vapour phase systems can show a difference in component lift due to the fundamental nature of the process. The vapour transfers the heat energy to the surface of the board due to the condensation and phase state change from vapour to liquid. [Wills \(n.d.\)](#) further states that the liquid film may subsequently interact with the components and cause their movement.

1.2 TOMBOSTONING

[Biseca \(2005\)](#) refers that tombstoning is one of many common, wetting related defects, arising in electronic manufacturing. A difference having some similarity to tombstoning is hillboarding. Unlike tombstoning where a discrete component has one termination

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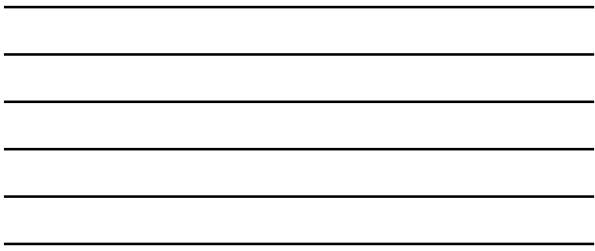
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for macrovoid was set out to 100 μm. Macrovoids are considered as process-dependent voids as they originate during the manufacturing process. The factors that have impact on voids are shown in Fishbone diagram, see Fig. 2.

1.4. Soldering process, void formation

Volatile compounds from the paste are evaporated and the solder paste melts during the soldering process. The evaporation takes place throughout the volume of the paste, not just on the surface. Gaseous components tend to leave the molten solder alloy but some of them remain trapped inside and create voids. The void formation principle is depicted in Fig. 3.

At first, solvents start evaporating due to temperature elevation. The solder paste is then heated to a temperature in which the flux is activated. The flux subsequently removes oxides from the surfaces to be joined and from the solder particles. The more oxides exist on the metallization and solder particles, the longer the outgassing takes and the more voids will remain entrapped in the joint at the end. Therefore it is necessary to give the flux enough time to remove the oxides. The outgassing may come not just as a result of oxides reduction but also as a result of evaporation of moisture or process chemicals trapped within PCB.

The use of inert atmosphere changes the surface tension of the molten solder [11] and therefore the ability of the cavity to leave through the surface of the molten alloy is influenced. The lead-free solder alloys have higher surface tension in comparison to tin-lead solders [12-14], therefore the cavities do not leave the melted joint easily and the probability of void occurrence is higher.

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The soldering time and specific temperature profile should be chosen used as a reflow parameter for solder pastes. The heating factor is from the perspective of reliability an ideal parameter for reflow profile optimization [15]. Study carried out by Hirman et al. [16] states that heating factor influences the intermetallic thickness. According to studies [17,18] there is no need to pay particular attention to the shape of a reflow profile if the heating factor is according to recommendation and dwell time, reflow peak temperature change and other parameters are within a usual range.

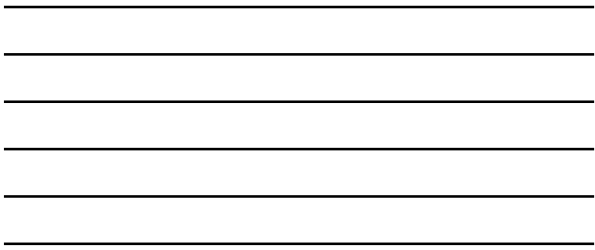
1.5. Reliability concerns and voiding

Most studies on joint-void topic are dealing with the voids as a soldering reliability problem. The Kirkendall voids cause according to a study by Goyal, D. et al. [19] an increase in brittleness of the joint. M. Yano et al. [20] conclude that large voids, irrespectively of their location, significantly reduce joint life and crack propagation is accelerated with the presence of small voids on component side. Chiu, T. C. et al. [21] proved that there is a very strong correlation between drop reliability and voiding. Previti, M.A. et al. [22] and several other studies [23-25] are therefore focused on minimizing the void presence.

Contrary, opinions from soldering companies [26,27] are that small and uniformly dispersed macrovoids are a necessary and required component of the joint. The issue as to whether and how voids affect the reliability of solder joints is still under discussion, voids may act as stress relievers and crack arresters, equally they can be stress raisers. They can be located anywhere in the soldered joint volume and their location has higher influence on the reliability than their size [9]. Macrovoids uniformly dispersed in the joint volume may increase the reliability of the joint, but their presence on the material boundary is always undesirable as the probability of the mechanical discontinuity is increased


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D. Bubek et al. / Microelectronics Reliability xxx (2016) xxx-xxx



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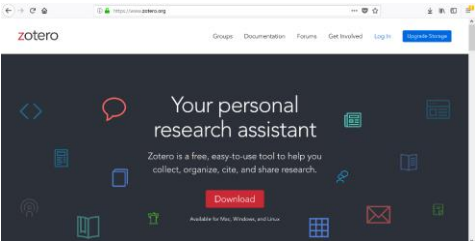
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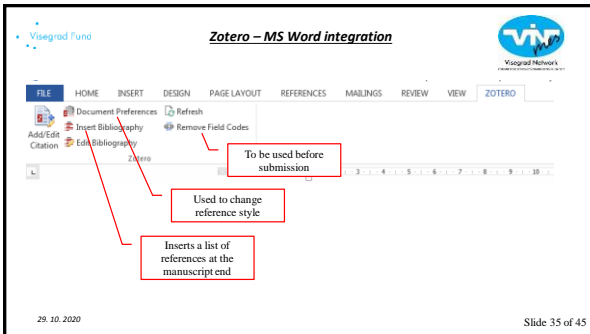
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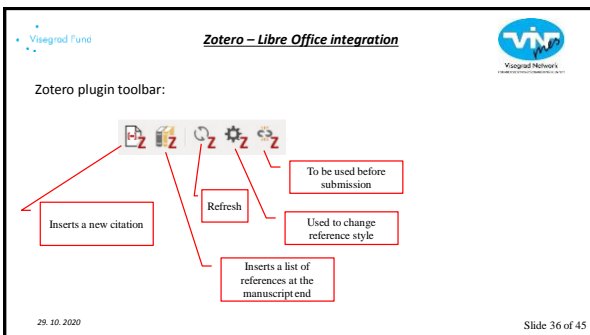
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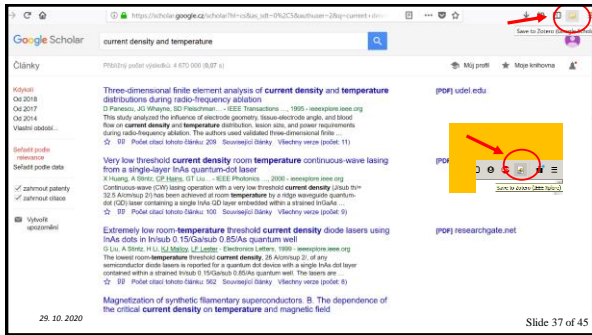
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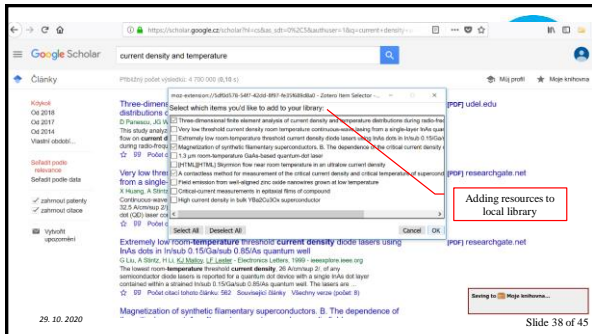
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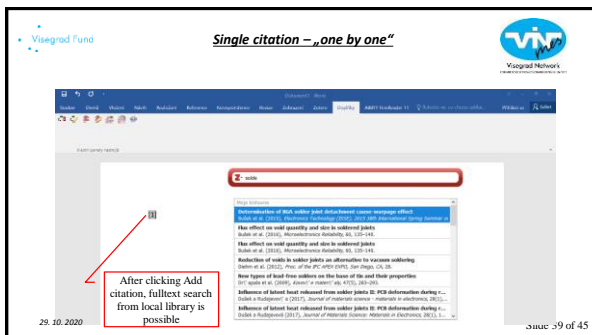
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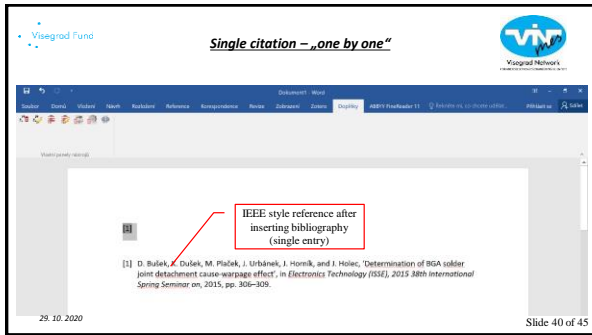


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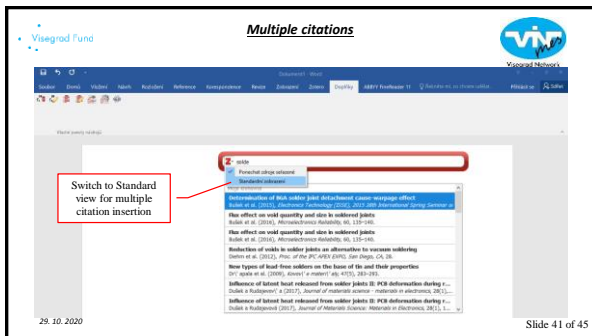


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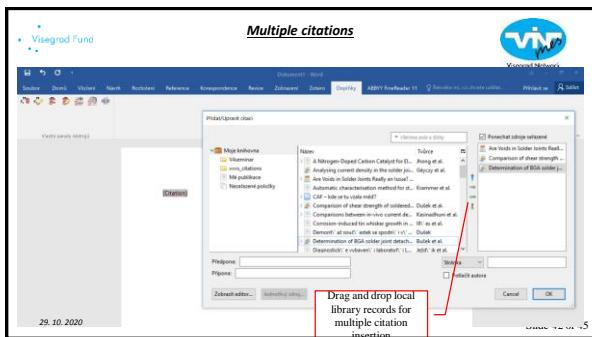





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