



Guide to MSSA abstracts

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Abstracts are returned because...

- The content is unacceptable
 - No order, poor spelling, illogical, unscientific, incomplete, incomprehensible
- The format is incorrect
 - Does not follow instructions given to authors

Scientific organization

- Four distinct components of the abstract:
 - What was the problem?
 - Introduction
 - How did you study the problem?
 - Methods and materials
 - What did you find?
 - Results
 - What do these findings mean?
 - Discussion

Introduction

- Supply sufficient background information to allow the reader to:
 - Understand the rationale of the study
 - Evaluate previous results without having to refer to other publications
 - Clearly define aim

Introduction

The use of galvanised coatings on steel wire for structural ropes and cables has become standard practice as unprotected steel is prone to corrosion degradation. Galvanised coatings increase service lifespan by providing barrier and cathodic corrosion protection to the underlying steel¹. Zinc (Zn) and zinc-aluminium (Zn-Al) alloys¹ are the most commonly used metallic coatings on steel wire. Zn-Al coatings outperform Zn coatings, most notably in marine environments, as they combine the highly insulating oxide film associated with Al corrosion and the cathodic protection of Zn to the underlying steel².

Rationale of the study

In this study, the corrosion of Zn-10Al (10% weight Al content) alloy coating on low carbon steel wire is investigated. Accelerated corrosion tests are performed in order to understand and quantify the mechanism by which such corrosion occurs.

Clearly defined aim

Methods

- How the study was carried out
- Three main points of interest:
 - Subjects
 - What were they?
 - How many?
 - How were they selected?
 - Apparatus
 - Equipment
 - Reagents
 - Procedure
 - Specimen preparation
 - Measurements taken
 - Data collection
 - Statistical manipulation

Methods

Subjects

Samples of 3mm diameter low carbon steel wire coated with 300g/m^2 of Zn-10Al were subjected to 2,016hrs of the ASTM B117 salt spray test³. These experiments were conducted in a Q-FOG cyclic corrosion tester. Corrosion products were removed from the surface of the samples at the end of the salt spray test, after which samples were sectioned, mounted and polished for metallography. Microstructural evaluations of the Zn-10Al coating before and after the salt spray test were performed using scanning electron microscopy (SEM) in a Nova NanoSEM 230 using the backscattered electron (BSE) detector.

Procedures

Apparatus

Results

- Presents the findings
- Draws attention to the points of interest
- Displays summarised and analysed data
 - Micrographs, table, graphs, stats
 - Be sure that these are correctly labelled and identified

Results

Displays analysed data

Draws attention to the points of interest

The BSE image in Fig. 1 reveals the nature of the Zn-10Al microstructure. The microstructure consists of a mixture of β (Al-rich) and η (Zn-rich) phases, represented by dark and light regions respectively, as determined by energy dispersive spectroscopy in the SEM. A distinct intermetallic layer of Fe-Zn-Al (A) was observed between the low carbon steel wire (B) and the Zn-10Al coating. Numerous cracks were observed within the Zn-10Al coating after the ASTM B117 salt spray test as shown in Fig. 2. These cracks are a clear indication of corrosion damage to the coating.

Discussion

- Discuss results in context of aims
 - Did you find what you expected?
 - Compare results with previous studies?
 - Why were your results un/expected?
- Avoid unimportant, unconstructive and negative arguments

Conclusion

- Main findings summarised
- Suggestions made for further research

Discussion and Conclusion

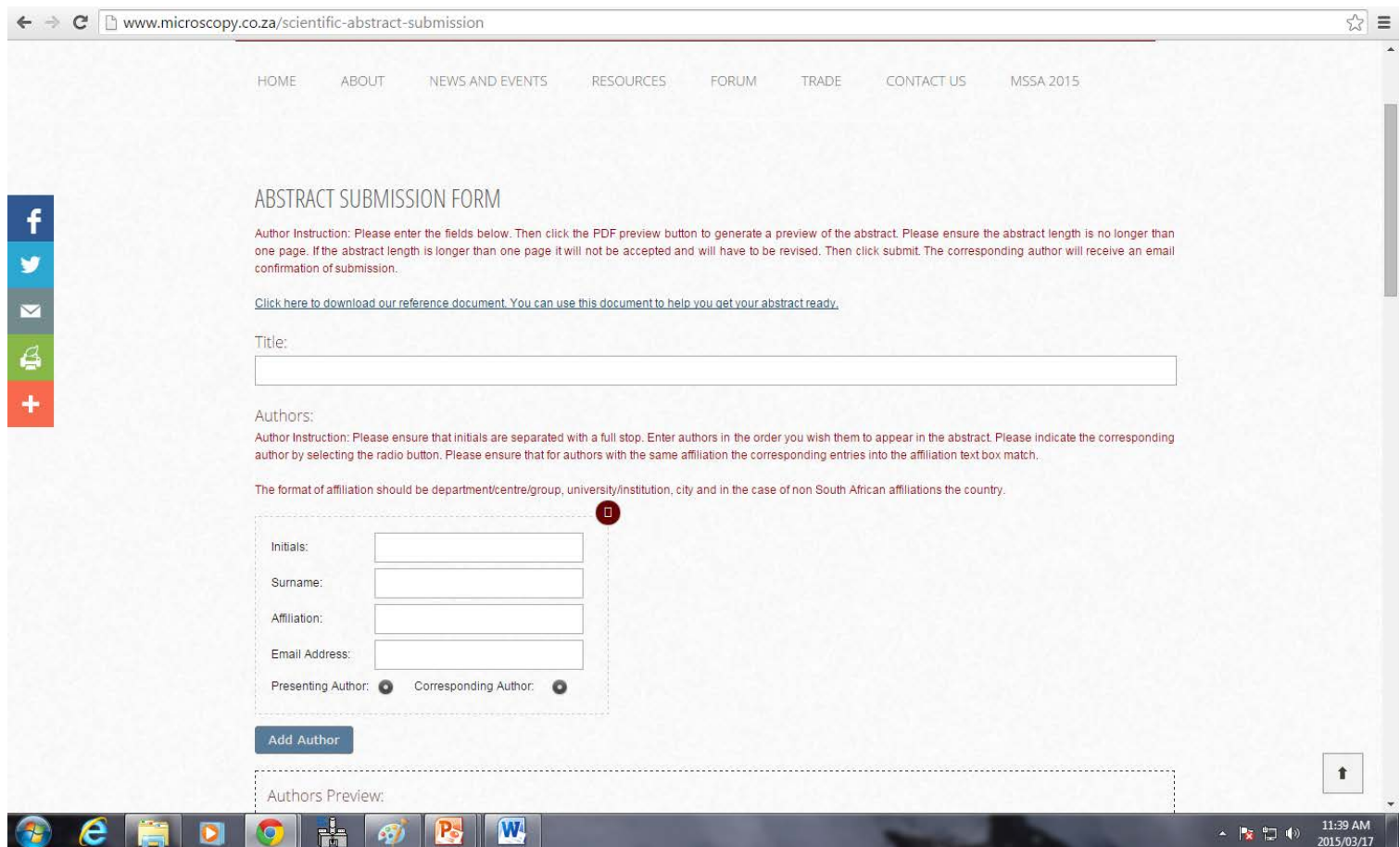
Explaining the results

Conclusion

A potential difference exists between β (Al-rich) and η (Zn-rich) phases in the Zn-10Al coating⁴. This leads to preferential corrosion of the η (Zn-rich) phase along grain boundaries of η (Zn-rich) primary crystals and β (Al-rich) primary crystals when the coating is exposed to a corrosive environment^{4,5}. The extensive crack formation can possibly be explained by the volume expansion arising from the internal corrosion products. Consequently, it may be concluded that although Al enhances the outer oxide layer protection, the microgalvanic effect associated with the two-phase microstructure can accelerate corrosion in harsh environments.

Submitting the abstract

An online form has been created for submission of abstracts to ensure correct formatting



The screenshot shows a web browser window with the address bar displaying www.microscopy.co.za/scientific-abstract-submission. The website has a navigation menu with links: HOME, ABOUT, NEWS AND EVENTS, RESOURCES, FORUM, TRADE, CONTACT US, and MSSA 2015. On the left side, there is a vertical stack of social media icons: Facebook, Twitter, Email, Print, and a plus sign for more options.

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Affiliation:

Email Address:

Presenting Author: ☐ Corresponding Author: ☐

Authors Preview:

The bottom of the screen shows a Windows taskbar with various application icons and a system clock indicating 11:39 AM on 2015/03/17.

Preparation

- The MS Word example can be used as a template to “copy and paste” your information into the online submission form if you wish to do so. This way you are assured that the page setup will be correct.
- The abstract must fit on **ONE PAGE ONLY**.
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- Enter the title of your abstract here. Maximum of 14 words. Please ensure that if any special characters are entered that they are correct. A toolbox will appear to allow for the inserting of special characters if needed.

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Surname:	<input type="text" value="Writer"/>	Surname:	<input type="text" value="Other"/>
Affiliation:	<input type="text" value="Unit for Microscopy, University of Abrac"/>	Affiliation:	<input type="text" value="Dept. of Anatomy, University of Marvelk"/>
Email Address:	<input type="text" value="email@author.com"/>	Email Address:	<input type="text" value="email2@author.com"/>
Presenting Author:	<input checked="" type="radio"/>	Presenting Author:	<input type="radio"/>
Corresponding Author:	<input type="radio"/>	Corresponding Author:	<input checked="" type="radio"/>

Initials should be separated by a full stop

Indicate Presenting author and Corresponding author using the radio buttons

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Click here to add author

Authors Preview:

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¹Unit for Microscopy, University of Abracadabra, Pretoria, ²Dept. of Anatomy, University of Marvelloussy, Krakatoa, ³Uni

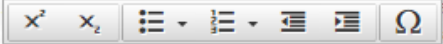
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Abstract main text:

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The abstract should be prepared to fit on one side of an A4 page, with a total printed area that is 260mm high and 170mm wide.

The body of the text is formatted in two columns, each a maximum of 235mm high, by 80mm wide. Margins should be 20mm on the left and right hand sides of the page, with 10mm spacing between the two columns. The top and bottom margins are both set at 17mm.

The font used throughout the abstract should be Times Roman font at 10pt size, spaced at 6 lines per inch.

The title should be descriptive, in bold capitals, contain a maximum of 14 words, and be centered. Species' names should be in lower case bold italics (not italicized capitals). No full stop at the end of the title. A blank line should be entered after the title.

The author/s names are in lower case, centered, and followed by another blank line, after which the author/s affiliations appear in lower case, centered. Abbreviated addresses may be used, so that the affiliations do not normally occupy more than one line. No punctuation marks appear after both the author and the affiliation lines. The e-mail address of the corresponding author appears at the foot of the right hand column.

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3586 of 3000 characters

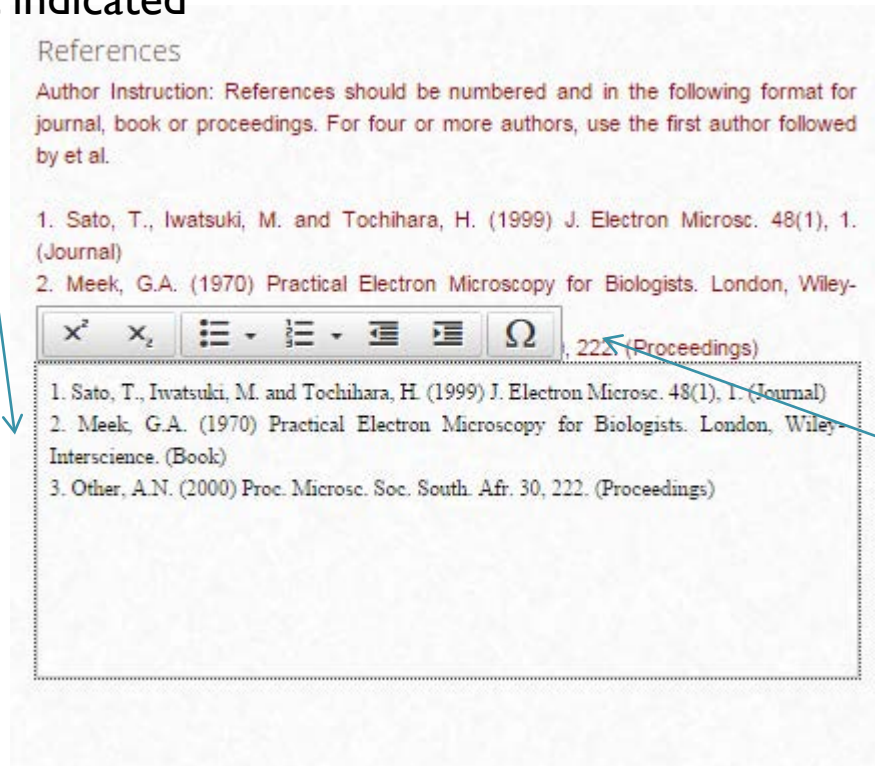
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References

Author Instruction: References should be numbered and in the following format for journal, book or proceedings. For four or more authors, use the first author followed by et al.

1. Sato, T., Iwatsuki, M. and Tochihara, H. (1999) J. Electron Microsc. 48(1), 1. (Journal)
2. Meek, G.A. (1970) Practical Electron Microscopy for Biologists. London, Wiley-Interscience. (Book)
3. Other, A.N. (2000) Proc. Microsc. Soc. South. Afr. 30, 222. (Proceedings)



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References

- Journal publication
 - Template:
 - Writer, A., Second, O.N.E and Last, O.N.E. (YEAR) Title of the Journal vol(issue), page.
 - Example:
 - Sato, T., Iwatsuki, M. and Tochihara, H. (1999) J. Electron Microsc. 48(1), 1.

References

- Book

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- Author, T.H.E. (YEAR) The title goes here.
Place, Publisher.

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- Meek, G.A. (1970) Practical Electron
Microscopy for Biologists. London, Wiley-
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References

- Proceedings

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- Author, A.N. (YEAR) Conference vol, page.

- Example:

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Online submission - Images

Figures:

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Caption:

Transverse section of a liana stem with concentric rings of vascular bundles

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- No figure numbering

76 of 300 characters

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Title of corresponding author:

Address of author to whom correspondence should be sent:

Postcode:

Telephone Number:

Fax Number:

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Information for Prizes (please tick appropriate option)

Yes No

1. Is this an innovative technique?

☐☐

2. Have you developed this technique?

☐☐

3. Is the senior author a registered student and under the age of 35 on 31 July 2019?

☐☐

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ONE E. Winter¹, A.N. Other² and N.R. Three¹

¹Unit for Microscopy, University of Abroadababa, Pretoria, ²Dept. of Anatomy, University of Marvellousity, Krakason

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The body of the abstract should begin after another blank line and should contain not less than 350 words. Paragraphs are not indented or numbered, are without headings and are separated by a blank line.

The text should describe the aim of the work and should provide a brief introduction, sufficient to orientate the non-specialist reader. A brief description of the techniques employed, a discussion of the results, and a mention of the most important conclusions should follow this.

The left hand column may contain text only; the right hand column may contain text, and/or tables and/or figures and references.

All figures should be referred to in the text (Fig. 1), should have brief but clear captions, and should be provided with a scale bar, the dimensions of which may be defined either in the figure or in the caption.

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Literature citations are by means of superscript numbers³.

Literature references should follow one double space below the text under the heading "References". For four or more authors, use the first author followed by et al.

References:

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3. Other, A.N. (2000) *Proc. Microsc. Soc. South Afr.* 30, 222. (Proceedings)



Figure 1. Transverse section of a lilia stem with concentric rings of vascular bundles

Corresponding author: email2@author.com

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Confirmation email

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References:

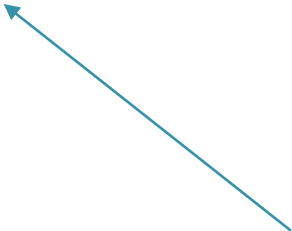
1. Sato, T., Iwatsuki, M. and Tochiara, H. (1999) J. Electron Microsc. 48(1), 1. (*Journal*)
2. Meek, G.A. (1970) Practical Electron Microscopy for Biologists. London, Wiley-Interscience. (*Book*)
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