



HOCHSCHULE
RAVENSBURG-WEINGARTEN
UNIVERSITY
OF APPLIED SCIENCES

READING CLUB VERÖFFENTLICHEN UND ZITIEREN

Prof. Dr.-Ing. Michael Niedermeier
niedermeier@rwu.de

Zustandsschaubilder

Die Vorlesungsunterlagen dienen ausschließlich der Lehre an der Hochschule Ravensburg-Weingarten RWU.

Jegliche Art der Veröffentlichung bedarf der Zustimmung des Autors.

Eine Verbreitung im Internet ist untersagt.

[Prof. M. Ashby, How to Write a Paper, Uni Cambridge 2005,
Internet www-mech.eng.cam.ac.uk/mmd/ashby-paper-V6.pdf,
Zugriff 14.6.2021]



How to Write a Paper

Mike Ashby

Engineering Department, University of Cambridge, Cambridge

6rd Edition, April 2005

Contents

1 The Design p 3

2 The Market—Who are your readers? p 4

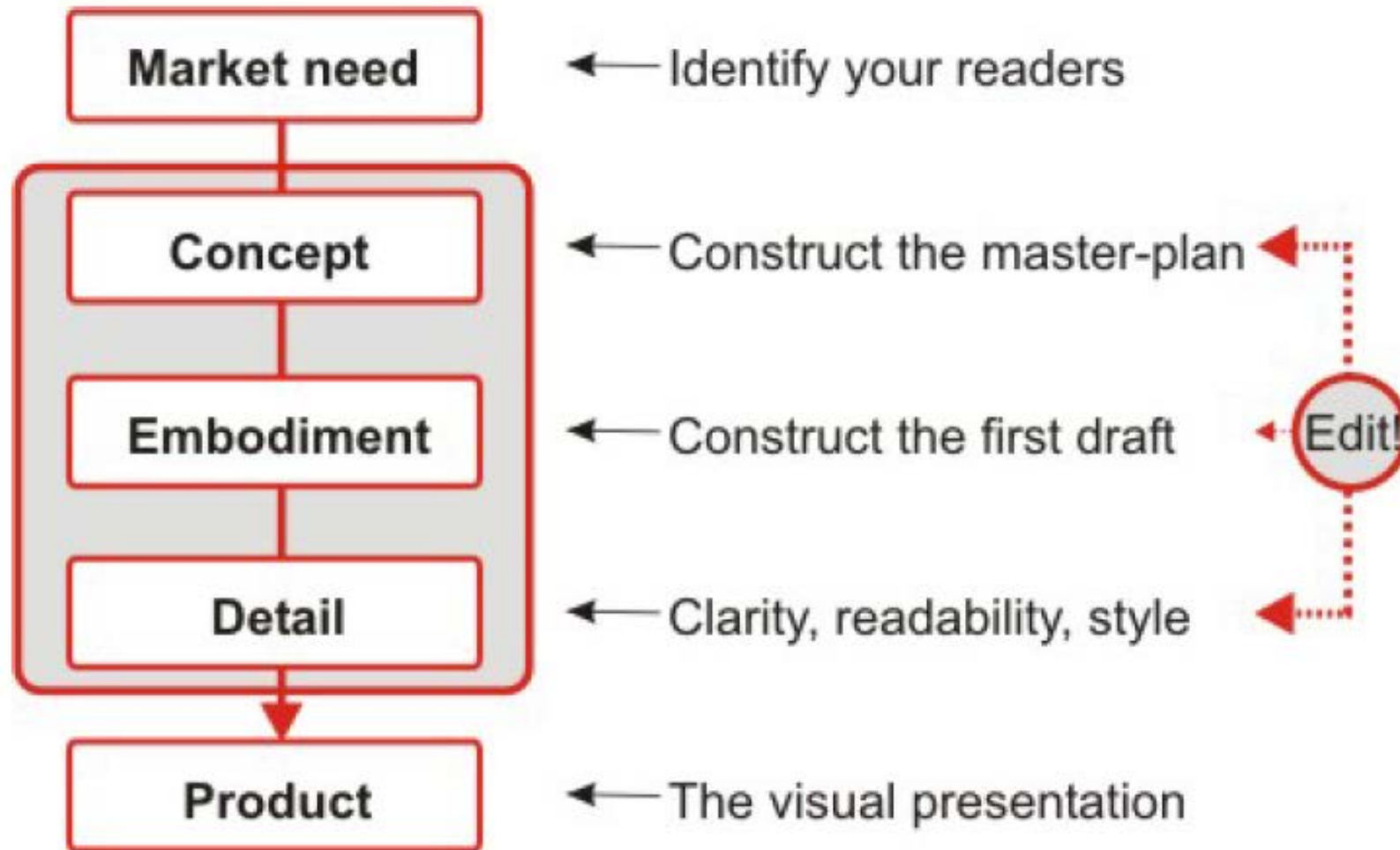
3 The Concept—Making a Concept-sheet p 5

4 Embodiment—The first draft p 9

1 THE DESIGN

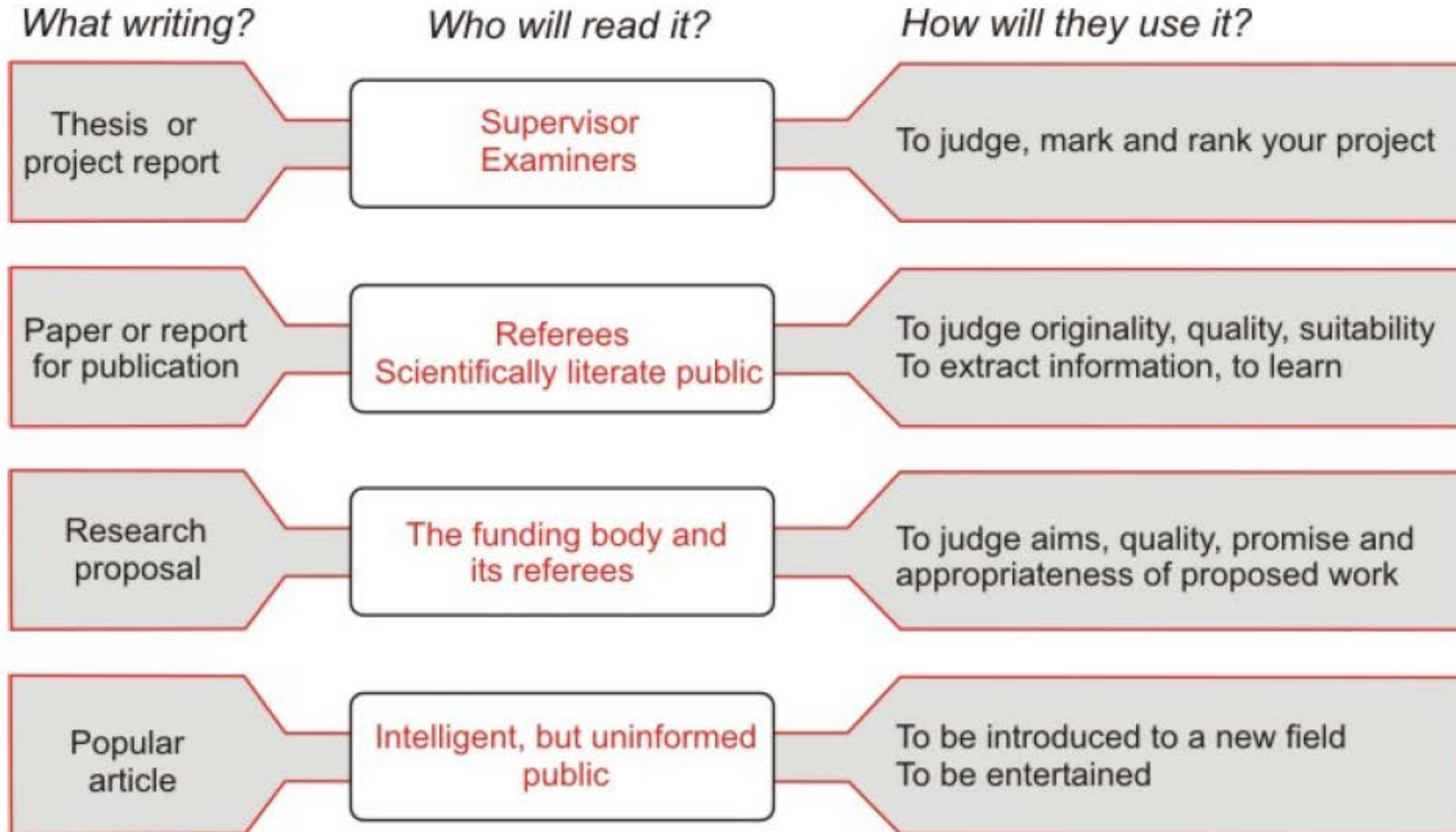
The Market Need. What is the purpose of the document? Who will read it? How will the reader use it? The answers help you decide the length, the level of detail, the style.

The Concept. Good writing starts with a plan. Writers have different ways of developing plans. I find the concept-sheet (Section 3, below) is a good way to do it.



[Prof. M. Ashby, How to write ..., Uni Cambridge 2005]

2 THE MARKET—Who are your readers?



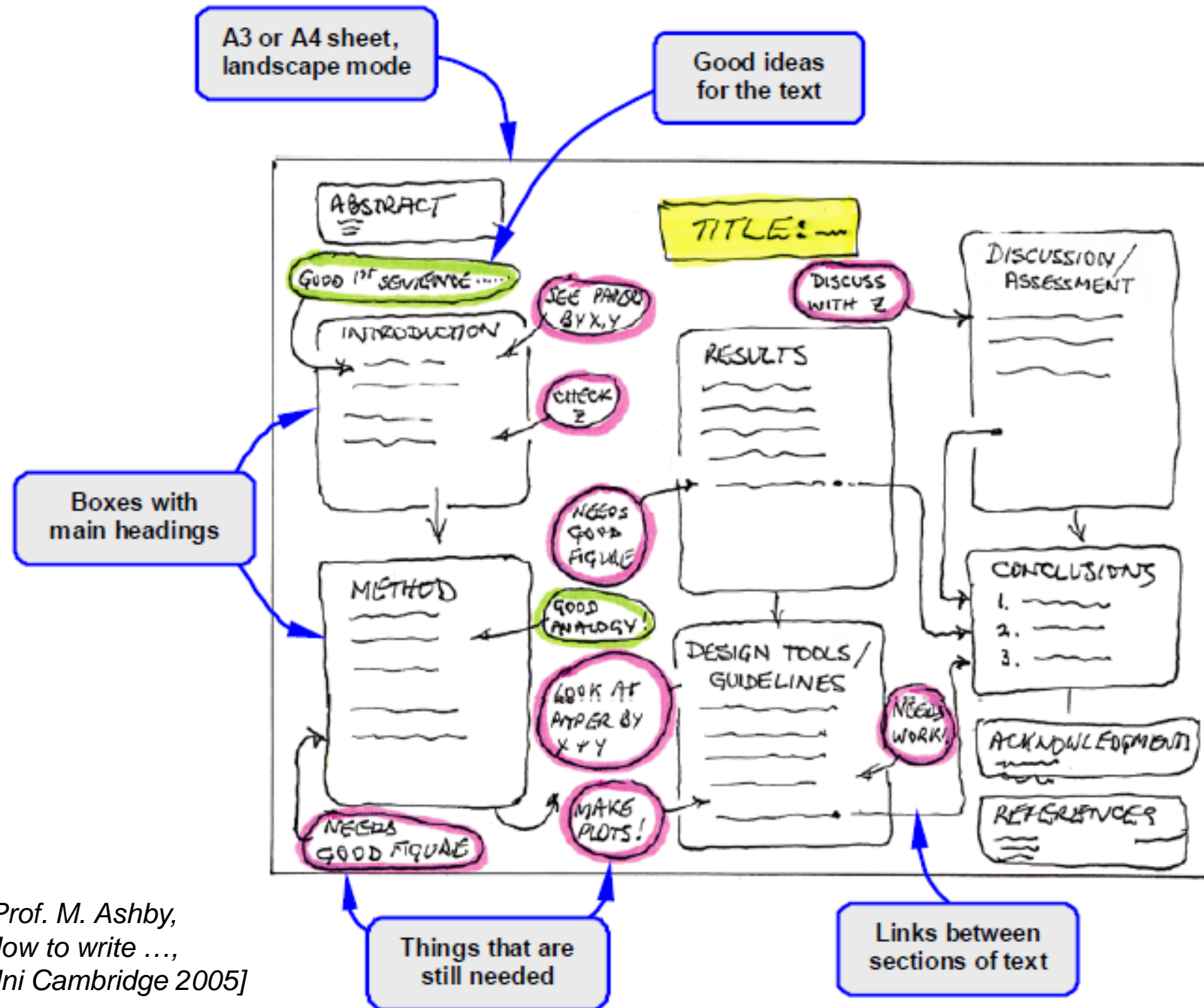
Reading Club team presentation

=> conference / symposium situation

=> lecture for interested students (mechanical engineering)

aim: to inspire students!

3 CONCEPT—Making a Concept-Sheet



[Prof. M. Ashby,
How to write ...,
Uni Cambridge 2005]



4 EMBODIMENT—The First Draft

4.1 TITLE

- Meaningful and brief, in 14 pt bold.

Fatigue of Metal Foams

is better than

**The Mechanical Response of Cymat and Alporas Metallic Foams to
Uni-axial Cyclic Loading**

even though it is less specific.

[Prof. M. Ashby, How to write ..., Uni Cambridge 2005]

4.2 ATTRIBUTION

- The names of the authors, with all initials; the Institute or organisation, with full address; the date.

**“A.M.Harte and C.Chen,
The Cambridge Centre for Micromechanics,
Cambridge University Engineering Department,
Cambridge CB2 1PZ, UK
January 1999.”**

[Prof. M. Ashby, How to write ..., Uni Cambridge 2005]

4.3 THE ABSTRACT

- Try for one sentence each on *motive, method, key results, conclusions*.
- Don't exceed 3 sentences on any one.

The reader of an Abstract has been lured by the title. He or she now want to know whether to read on. Tell them, in as few sentences as possible, what they will find. No waffle, no spurious details. Try not to exceed 100 words. Imagine that you are paying a 10p a word. See the Appendix for an example.

4.4 INTRODUCTION

- What is the problem and why is it interesting?
- Who are the main contributors?
- What did they do?
- What novel thing will you reveal?

4.5 METHOD

- *Experimental paper:* equipment, materials, method

Modelling paper: assumptions, mathematical tools,
method

Computational paper: inputs, computational tools, method

- **Explain** what is especially different about your method.
- **Give** sufficient detail that the reader can reproduce what you did.
- **Don't** mix Method with **Results** or **Discussion**—they come next.

[Prof. M. Ashby, *How to write ...*, Uni Cambridge 2005]

4.6 RESULTS

- Present the output of the experiments, model or computation.
- Don't mix Results with Discussion. It belongs—all of it—in 4.7.

4.7 DISCUSSION

- **Extract principles, relationships, generalisations.**
- **Present analysis, model or theory.**
- **Show relationship between the results and analysis, model or theory.**

4.8 CONCLUSION

- Draw together the most important results and their consequences.
- List any reservations or limitations.

4.9 ACKNOWLEDGEMENTS

- Thank people who have helped you with ideas, technical assistance, materials or finance.

[Prof. M. Ashby, How to write ..., Uni Cambridge 2005]

4.10 REFERENCES

- Cite significant previous work.
- Cite sources of theories, data, or anything else you have taken from elsewhere.
- References must be complete: name, initials, year, title, journal, volume, start-page and finish-page.

Example

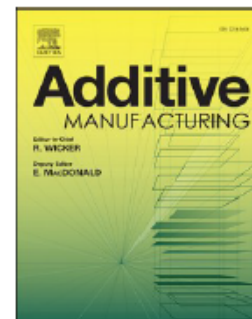


peer review paper

Contents lists available at ScienceDirect

Additive Manufacturing

journal homepage: www.elsevier.com/locate/addma



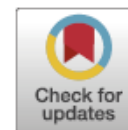
Research Paper

Application-oriented assessment of the interlayer tensile strength of additively manufactured polymers

Patrick Striemann^{a,*}, Daniel Huelsbusch^b, Michael Niedermeier^a, Frank Walther^b

^a Laboratory of Material Testing, University of Applied Sciences Ravensburg-Weingarten, Doggenriedstraße 42, D-88250 Weingarten, Germany

^b Department of Materials Test Engineering (WPT), TU Dortmund University, D-44227 Dortmund, Germany



ARTICLE INFO

Keywords:

Anisotropy
Application-oriented
Failure mechanism
Material extrusion
Mechanical characterization
Process-induced effects
Superimposition

ABSTRACT

Extrusion-based additive manufacturing is often characterized with process-property-structure relationships, which lead to superimposed process-related effects. This study aims to separate superimposed effects, which occur due to the change of the process parameter layer height. The mechanical properties, in particular the interlayer tensile strength, are used to characterize the material capability in manufacturing direction z according to ASTM F2971. Different surface textures in the form of idealized, polished specimens and application-oriented, as built specimens complete the experimental design. The investigations highlight a decreasing primary surface profile and a higher material capability with decreasing layer height. The special design of experimental

1. Introduction

The additive manufacturing (AM) technique material extrusion is known as Fused Deposition Modeling (FDM™) or Fused Filament Fabrication (FFF). In the early days, the manufacturing process, which primary handle polymer material, was used for prototypes. But this technology is not limited to the production of prototypes, the generation of final parts is also possible [1]. The transfer from prototype application to a reliable production system requires development efforts. In particular, the optimization of machines and processes, but also a deep knowledge of the influence and interactions of parameter settings on the mechanical properties [2]. The validation of specific prototype applications with reliable and reproducible material properties is commonly performed by component testing. Thereby, just one individual material state with given geometry is tested and a comparability is not possible due to complex correlations within process-property-structure relationships. These challenges with accurately determined and comparable material properties have to be solved for a reliable manufacturing process and designing serial parts. Unfortunately, no standards for AM polymers are available that define a uniform approach for characterizing

the material capability. The general procedure is the adaption of current standards. Often standards for quasi-isotropic injection molded parts are adapted, but the material extrusion parts are highly anisotropic and therefore comparable to composites [3,4]. Thus, for some material properties the standards for composite testing are used. However, composites have a larger ratio of moduli and failure strength, which leads to different mechanics of load distribution and crack propagation under shear loading [5]. Hence, the unique aspects of AM indicate the need for AM-specific material testing standards [6].

Because of missing standards, there are many different approaches to characterize AM polymers. Some of the studies investigate the material properties in plane of the moving direction of printing head (xy-plane). Letcher et al. [7], Wittbrodt et al. [8] and Tekinalp et al. [9] investigated the tensile properties of AM polymers according to the ASTM D638. The specimens had an as built surface, which means the specimens were not subjected to a post surface treatment after manufacturing. Dawoud et al. [10] compared AM with injection molded polymer according to the DIN 527. It was highlighted that AM has a negative impact on the material capability compared to the reference manufacturing system injection molding. This leads to the issue of the comparability of different surface

* Corresponding author.

E-mail address: patrick.striemann@rwu.de (P. Striemann).

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

References

- [1] R. Jerez-Mesa, J.A. Travieso-Rodriguez, J. Llumà-Fuentes, G. Gomez-Gras, D. Puig, Fatigue lifespan study of PLA parts obtained by additive manufacturing, *Procedia Manuf.* 13 (2017) 872–879, <https://doi.org/10.1016/j.promfg.2017.09.146>.
- [2] B. Rankouhi, S. Javadpour, F. Delfanian, T. Letcher, Failure analysis and mechanical characterization of 3D printed ABS with respect to layer thickness and orientation, *J. Fail. Anal. Prev.* 16 (2016) 467–481, <https://doi.org/10.1007/s11668-016-0113-2>.
- [3] R.J. Zaldivar, D.B. Witkin, T. McLouth, D.N. Patel, K. Schmitt, J.P. Nokes, Influence of processing and orientation print effects on the mechanical and thermal behavior of 3D-printed ULTEM ® 9085 Material, *Addit. Manuf.* 13 (2017) 71–80, <https://doi.org/10.1016/j.addma.2016.11.007>.
- [4] Y. Song, Y. Li, W. Song, K. Yee, K.-Y. Lee, V.L. Tagarielli, Measurements of the mechanical response of unidirectional 3D-printed PLA, *Mater. Des.* 123 (2017) 154–164, <https://doi.org/10.1016/j.matdes.2017.03.051>.
- [5] A.M. Forster, Materials testing standards for additive manufacturing of polymer materials: state of the art and standards applicability, *Natl. Inst. Stand. Technol.* (2015).
- [6] D.A. Roberson, A.R. Torrado Perez, C.M. Shemelya, A. Rivera, E. MacDonald, R. B. Wicker, Comparison of stress concentrator fabrication for 3D printed polymeric izod impact test specimens, *Addit. Manuf.* 7 (2015) 1–11, <https://doi.org/10.1016/j.addma.2015.05.002>.

Qualität des Verlages, der Zeitschrift => Internetpublikation

- pre view paper
- peer review paper: impact factor
- Vorsicht: internet paper

Literatur zitieren

Wissenschaft:

1. Beobachten und sammeln
2. Sortieren
3. Hypothese
4. Beweis \Rightarrow These

Primärliteratur:

- Fachzeitschriften (Journals)
- Dissertationen
- Internetquellen?
- persönliche Informationen?

Sekundärliteratur:

- Lehrbücher
- Internetquellen?

Tertiärliteratur:

- ~~Vorlesungsskripte~~

Wo suchen:

- **Bibliothek** => professioneller Suchauftrag!
- Suchmaschinen:
 - => Meta (z.B. MetaCrawler: www.metacrawler.de)
 - => Subito (Fernleihe)
 - => OPAC, science direct, springer link, Hanser e-library,
... usw.
 - => Qucosa, DNB, ndltd
 - => Digitale Bibliotheken der Universitäten
z.B. www.library.ethz.ch/Ressourcen/Digitale-Bibliothek
 - ⇒ NASA, DLR, MIL military handbooks
 - ⇒ perinorm

Sammeln und Sortieren:

- Laborheft / Skizzen-Notizen-Heft
- Ordner
- Software: z.B. Citavi www.citavi.com

Zitieren

- DIN ISO 690
- **IEEE Institute of Electrical and Electronical Engineers**
- APA American Psychological Association

Quellenangabe in [...]

Beispiele zum Zitieren:

Wörtliches Zitat

..."Zur Ionenbildung muss Energie ..." [1, S. 36]

oder

..."Zur Ionenbildung muss Energie ..." [ASH, S. 36]

Sinngemäßes Zitat

... wie in [1, 2] dargelegt, muss eine Verwendung von Automatenstahl ...

oder

... wie in [ROM, ASH] dargelegt, muss eine Verwendung von ...

B e i s p i e l e 1:

- [1] Muhs, Wittel, et al., *Roloff Matek Maschinenelemente*, Lehrbuch Vieweg-Verlag 2007
- [2] Ashby M.F., Jones D.R.H., *Ingenieurwerkstoffe*, Springer 1986
- [3] ...
- [4] Sell K., *The Project Team*, Business Spotlight, Spotlight Press 1/03, pp. 30-31

B e i s p i e l e 2:

[ROM] Muhs, Wittel, et al., *Roloff Matek Maschinenelemente*, Lehrbuch Vieweg-Verlag 2007

[ASH] Ashby M.F., Jones D.R.H., *Ingenieurwerkstoffe*, Springer 1986

[SEL] Sell K., *The Project Team*, Business Spotlight, Spotlight Press 1/03, pp. 30-31

Zitieren von Quellen aus dem Internet

B e i s p i e l e 3:

[5] Döring, N. (1996). Lernen und Lehren im Netz.

Online im internet: WWW:www.cs.tuberlin.de/~doering/lernen.htm (Zugriff am 3.2.97)

[BL1] Werkstoffdatenblatt 1.4301, www.metallograf.de (Zugriff am 13.11.2014)

Filmadaptionen von Werken THOMAS MANNS werden in der Forschung nur am Rande behandelt; so existiert zu *Tonio Kröger* und *Wälsungenblut* – wie auch zu *Der kleine Herr Friedemann*⁵³ – jeweils nur eine Monographie in der Forschungsliteratur. Letztere stellen den Aspekt der Werktreue in den Fokus der Betrachtung, fragen, „welche Möglichkeiten der Übersetzung eines literarischen Werks der Film [...] theoretisch zur Verfügung stellt“⁵⁴, *Morte a Venezia* zieht hingegen als „produktive Transformation“⁵⁵ das Interesse der Forschung immer wieder auf sich; herausragende Studien stammen hier von WERNER FAULSTICH, HANS R. VAGET, HANS MAYER, ROLF G. RENNER und nicht zuletzt von ROGER LÜDEKE, der die antagonistischen Gewalten⁵⁶ in der Adaption thematisiert.⁵⁷

⁵³ WESSENDORF, STEPHAN 1998: *Thomas Mann verfilmt. Der kleine Herr Friedemann, Tristan und Mario und der Zauberer im medialen Wechsel*. Frankfurt am Main: Peter Lang.

⁵⁴ SEITZ, GABRIELE ²1981: *Film als Rezeptionsform von Literatur. Zum Problem der Verfilmung von Thomas Manns Erzählungen „Tonio Kröger“, „Wälsungenblut“ und „Der Tod in Venedig“*. 2. Aufl. München: tuduv-Verlagsgesellschaft, S. 1.

⁵⁵ RENNER, ROLF G. ³2001: *Verfilmungen der Werke von Thomas Mann*. In: *Thomas-Mann-Handbuch*. Hrsg. von HELMUT KOOPMANN. 3., aktualisierte Aufl. Stuttgart: Kröner, S. 801.

⁵⁶ vgl. ebd.

⁵⁷ vgl. SEITZ 1981, S. 102.



CORROSION SCIENCE

The Journal on Environmental Degradation of Materials and its Control

AUTHOR INFORMATION PACK

TABLE OF CONTENTS

| | | |
|---|--------------------------|-----|
| • | Description | p.1 |
| • | Audience | p.1 |
| • | Impact Factor | p.1 |
| • | Abstracting and Indexing | p.2 |
| • | Editorial Board | p.2 |
| • | Guide for Authors | p.3 |



ISSN: 0010-938X

IMPACT FACTOR

2013: 3.686 © Thomson Reuters Journal Citation Reports 2014

EDITORIAL BOARD

Editor-in-Chief

G.T. Burstein, Dept. of Materials Science and Metallurgy, University of Cambridge, 27 Charles Babbage Road, Cambridge, CB3 0FS, England, UK

Editorial Board

A.D. Davydov, Russian Academy of Sciences, Moscow, Russian Federation

E.-H. Han, Chinese Academy of Sciences (CAS), Shenyang, Liaoning, China

K. Hashimoto, Tohoku Institute of Technology, Sendai, Japan

A.W. Hassel, Johannes-Kepler-Universität Linz, Linz, Austria

N.J. Laycock, Shell Todd Oil Services, New Plymouth, New Zealand

F. Mansfeld, University of Southern California, Los Angeles, California, USA

P. Marcus, Université Pierre et Marie Curie, Sorbonne Universités, Paris, France

O.R. Mattos, Federal University of Rio de Janeiro, Rio De Janeiro, Brazil

H.W. Pickering, Pennsylvania State University, University Park, Pennsylvania, USA

T. Shoji, Tohoku University, Sendai, Japan

Z. Szklarska-Smialowska, Ohio State University, Columbus, Ohio, USA

G.E. Thompson, University of Manchester Institute of Technology (UMIST), Manchester, UK

S. Virtanen, Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen, Germany

Copyright

This journal offers authors a choice in publishing their research: Open access and Subscription.

For subscription articles

Upon acceptance of an article, authors will be asked to complete a 'Journal Publishing Agreement' (for more information on this and copyright, see <http://www.elsevier.com/copyright>). An e-mail will be sent to the corresponding author confirming receipt of the manuscript together with a 'Journal Publishing Agreement' form or a link to the online version of this agreement.

Subscribers may reproduce tables of contents or prepare lists of articles including abstracts for internal circulation within their institutions. Permission of the Publisher is required for resale or distribution outside the institution and for all other derivative works, including compilations and translations (please consult <http://www.elsevier.com/permissions>). If excerpts from other copyrighted works are included, the author(s) must obtain written permission from the copyright owners and credit the source(s) in the article. Elsevier has preprinted forms for use by authors in these cases: please consult <http://www.elsevier.com/permissions>.

For open access articles

Upon acceptance of an article, authors will be asked to complete an 'Exclusive License Agreement' (for more information see <http://www.elsevier.com/OAauthoragreement>). Permitted reuse of open access articles is determined by the author's choice of user license (see <http://www.elsevier.com/openaccesslicenses>).

Article structure

Follow this order when typing manuscripts: Title, Authors, Affiliations, Abstract, Keywords, Main text, Acknowledgements, Appendix, References, Figure Captions and then Tables. Do not import figures into the text - see Illustrations. Collate acknowledgements in a separate section at the end of the article and do not include them on the title page, as a footnote to the title or otherwise.

Introduction

State the objectives of the work and provide an adequate background, avoiding a detailed literature survey or a summary of the results.

Material and methods

Provide sufficient detail to allow the work to be reproduced. Methods already published should be indicated by a reference: only relevant modifications should be described.

Theory/calculation

A Theory section should extend, not repeat, the background to the article already dealt with in the Introduction and lay the foundation for further work. In contrast, a Calculation section represents a practical development from a theoretical basis.

Results

Results should be clear and concise.

Discussion

This should explore the significance of the results of the work, not repeat them. A combined Results and Discussion section is often appropriate. Avoid extensive citations and discussion of published literature.

Conclusions

The main conclusions of the study may be presented in a short Conclusions section, which may stand alone or form a subsection of a Discussion or Results and Discussion section.

Appendices

If there is more than one appendix, they should be identified as A, B, etc. Formulae and equations in appendices should be given separate numbering: Eq. (A.1), Eq. (A.2), etc.; in a subsequent appendix, Eq. (B.1) and so on. Similarly for tables and figures: Table A.1; Fig. A.1, etc.

Reference style

Text: Indicate references by number(s) in square brackets in line with the text. The actual authors can be referred to, but the reference number(s) must always be given.

Example: '..... as demonstrated [3,6]. Barnaby and Jones [8] obtained a different result'

List: Number the references (numbers in square brackets) in the list in the order in which they appear in the text.

Examples:

Reference to a journal publication:

[1] J. van der Geer, J.A.J. Hanraads, R.A. Lupton, The art of writing a scientific article, J. Sci. Commun. 163 (2010) 51–59.

Reference to a book:

[2] W. Strunk Jr., E.B. White, The Elements of Style, fourth ed., Longman, New York, 2000.

Reference to a chapter in an edited book:

[3] G.R. Mettam, L.B. Adams, How to prepare an electronic version of your article, in: B.S. Jones, R.Z. Smith (Eds.), Introduction to the Electronic Age, E-Publishing Inc., New York, 2009, pp. 281–304.