# Tutorials on Scientific Writing and Presentations

Igor A. Abrikosov
Department of Physics, Chemistry and Biology (IFM)
Linköping University, Sweden
(igor.abrikosov@liu.se)

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QUEST

QRC-4-ESP

J. Phys. B: At. Mol. Opt. Phys. **21** (1988) L31-L35. Printed in the UK

LETTER TO THE EDITOR

# Multiple-harmonic conversion of 1064 nm radiation in rare gases

M Ferray, A L'Huillier, X F Li, L A Lompré, G Mainfray and C Manus

Service de Physique des Atomes et des Surfaces, 91191 Gif sur Yvette, Cédex, France

Received 2 November 1987

**Abstract.** We report the observation of very-high-order odd harmonics of Nd:YAG laser radiation in rare gases at an intensity of about $10^{13}$ W cm$^{-2}$. Harmonic light as high as the 33rd harmonic in the XUV range (32.2 nm) is generated in argon. The key point is that the harmonic intensity falls slowly beyond the fifth harmonic as the order increases. Finally, a UV continuum, beginning at 350 nm and extending down towards the short wavelength region is apparent in xenon.

## Core commitments

The core commitments include two commitments to enable better recognition of the diverse practices and activities that maximise the quality of research as well as two commitments to enable a move away from inappropriate uses of metrics.

### 1. Recognise the diversity of contributions to, and careers in, research in accordance with the needs and nature of the research

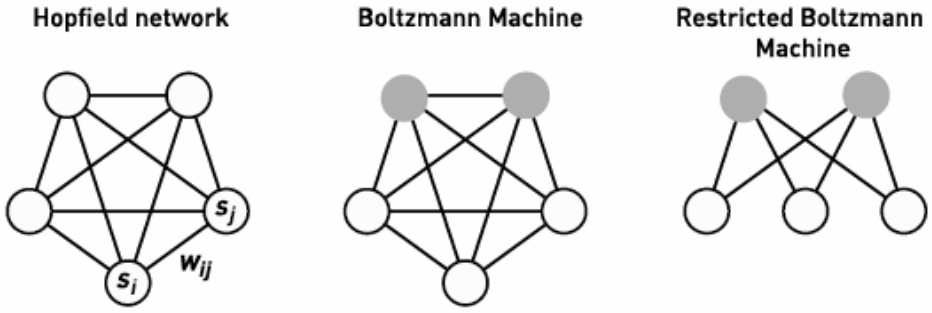
**Purpose:** This commitment will broaden recognition of the diverse practices, activities and careers in research, considering the specific nature of research disciplines and other research endeavours.

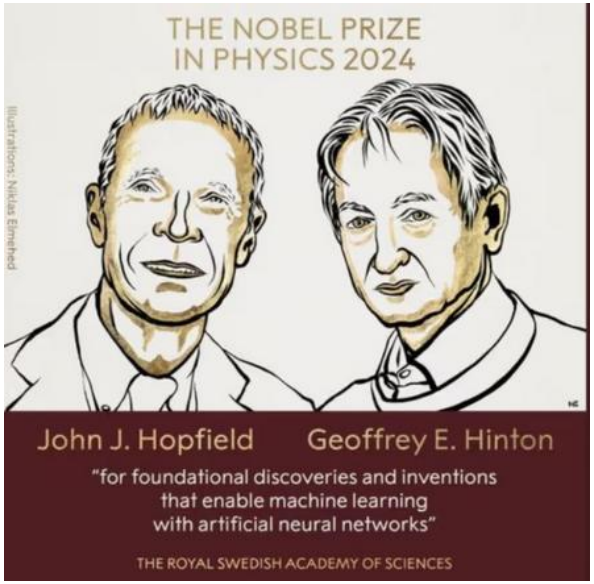
**Scope:** Changes in assessment practices should enable recognition of the broad diversity of:

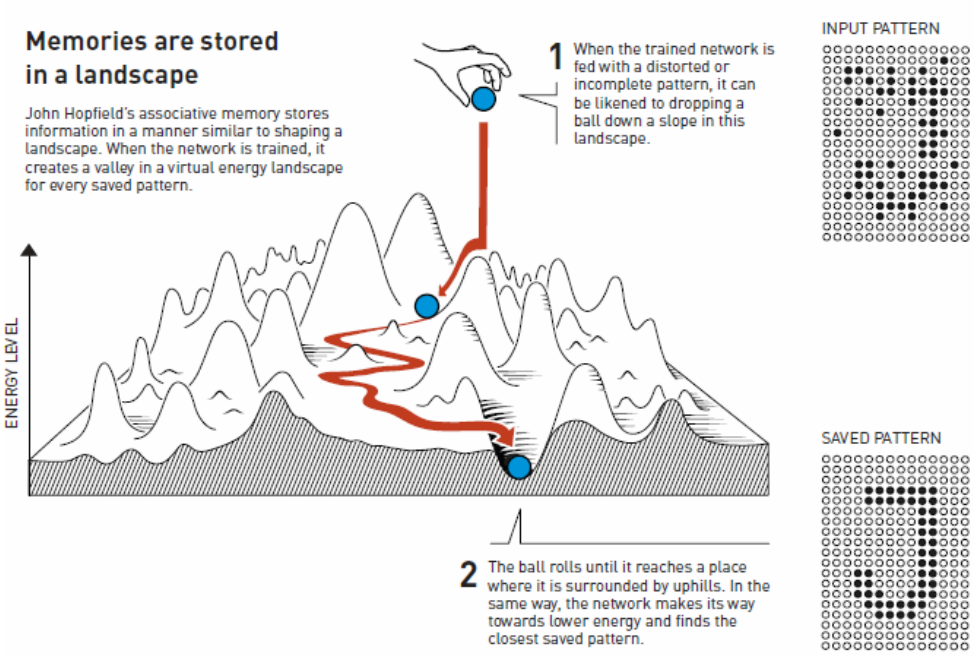


- valuable contributions that researchers make to science and for the benefit of society, including diverse outputs beyond journal publications and irrespective of the language in which they are communicated;
- practices that contribute to robustness, openness, transparency, and the inclusiveness of research and the research process including: peer review, teamwork and collaboration;
- activities including teaching, leadership, supervision, training and mentoring.

# Artificial Intelligence/ Machine Learning





The choice of problems is the primary determinant of what one accomplishes in science
KUNGL. VETENSKAPS AKADEMIEN


'I ask myself whether the problem I am considering is one to which I am likely to be able to make a contribution'
Linus Pauling
1901-1994
Nobel Foundation
KUNGL VETENSKAPS AKADEMIEN

# My way to work on a manuscript

- Find [exciting] project idea.
- Perform an overview of existing literature.
- Estimate efforts and potential impact. Discuss it with [trusted] colleagues [and with your supervisor]. Build your team.
- Run the project [in collaboration with your team].
- Make a summary of your results.
- Discuss the results with your team. Make sure that you have accomplished your project (the outcome may not be the same as you expected originally).

# My way to work on a manuscript

- Draft a skeleton of your manuscript (ideas for introduction, figures, tables, conclusions).
- Discuss the skeleton with your team.
- Make the first draft.
- Distribute [remaining] task to your team with [semi-]hard deadline.
- Make the final draft and distribute it for comments with a hard deadline.
- Submit the manuscript.
- This is just a start ☺.

# My way to work on a response to comments from referees and/or editors

- A direct acceptance of the manuscript is a [rare] exception. Be ready to fight!
- Distribute the referee reports to all the co-authors directly.
- If the report is negative, use the “two-day rule”: forget about it for two days (while you are angry).
- Editors and referees are [in general] not your enemies, and they are [in general] not stupid.
- Important: do the referees pointed to errors in your manuscript? You may need to accept it and start your project from the very beginning (or even abandon it).

# My way to work on a response to comments from referees and/or editors

- Estimate efforts and potential impact in addressing the critical comments of the referees. Discuss it with your team.
- Evaluate an option of resubmission to another journal, still addressing important and reasonable comments of the referees.
- Resubmission to the same journal requires careful response to all the comments of the referees.

# My way to work on a response to comments from referees and/or editors

- Distinguish between adequate requests from referees and their misunderstandings.
- Address all the adequate requests, though it may take lot of efforts.
- Make a careful (and highly respectful) clarification of the misunderstandings. Update the manuscript [to show your respect and to avoid the same misunderstanding of other readers].

# My way to work on a response to comments from referees and/or editors

- Write point-by-point response. Include updates of the manuscript in the response [if they are not too long] or point to the manuscript section with the updates [if they are too long].
- Update the manuscript.
- Iterate the response letter and the manuscript with your team.
- Resubmit the manuscript.
- Be ready to iterate the process.
- If you see **errors** made by the referees or you can prove that their reports are **biased**, be ready to appeal.

# My way to prepare a presentation

- Presentation is very important way of promoting your scientific results.
- There are different types of presentations: (short) contributed talks, invited/keynote presentations at large conferences, workshop presentations, seminars, presentations to (industrial) partners, politicians, etc.
- Different types of presentations have different goals!
- Think of your audience. Adjust level of your presentations accordingly.
- Be careful with unpublished results.

# My way to make a presentation

- Start with background information. Put your presentation into a context important for specific audience.
- Formulate your research question(s).
- Present methodology in a way suitable for the audience.
- Ideally, start with results that are familiar for the audience.
- Present your main result(s) with excitement.
- Keep a contact with the audience.
- Respect time limits. Leave time for questions.
- Enjoy questions from audience.

# Title of Presentation

Authors' names

Institution or affiliation

Website/email contact (if necessary)

**Acknowledgements:**

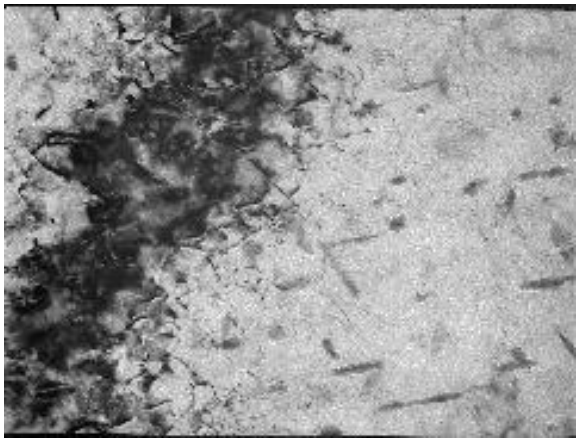
e.g. International Science
Foundation project XW100
Professor J. Blogs, Dr W. Ho

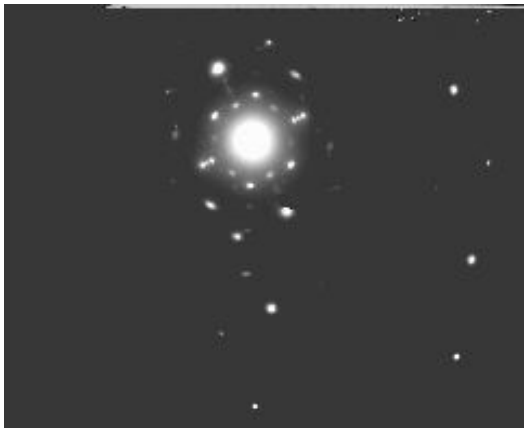
(your institution logo)

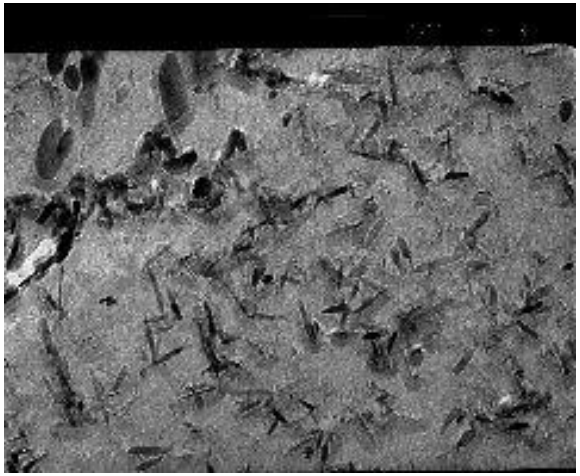
# Rules for presentations

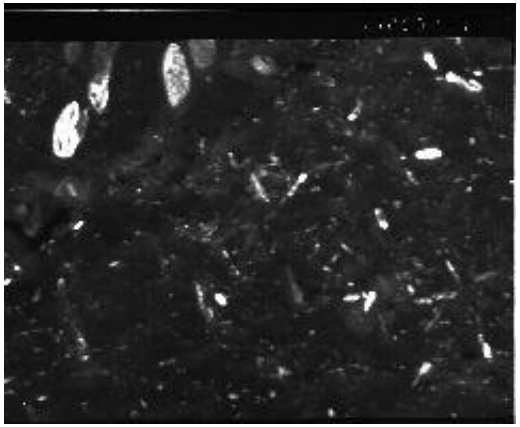
- Think about the color scheme! I prefer white slide backgrounds (except title and conclusions).
- Author names, logo, acknowledgments only on title slide.
- Keep titles brief.
- Use reasonable fonts (e.g. Arial).
- Maximum number of slides: my rule is max 1 slide per minute of presentation.
- Avoid animations.
- Provide citations to publications corresponding to results shown in the slide (say, right bottom corner). Distinguish your publications and publications by others.

# Example of bad slide



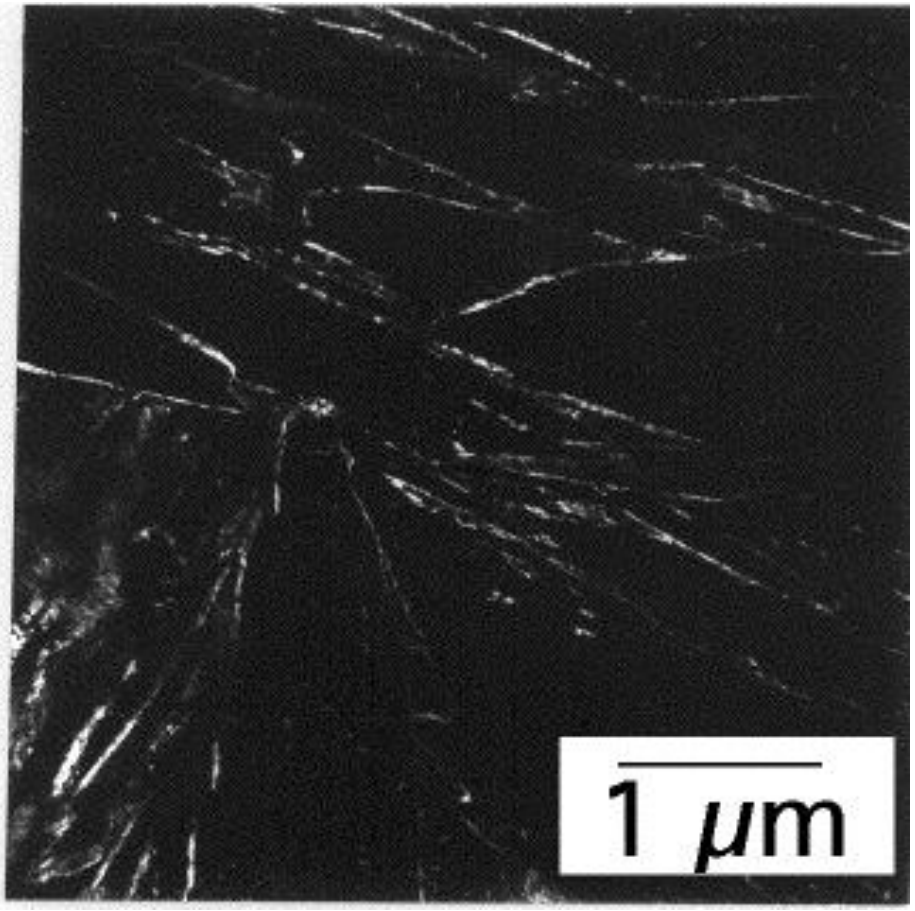






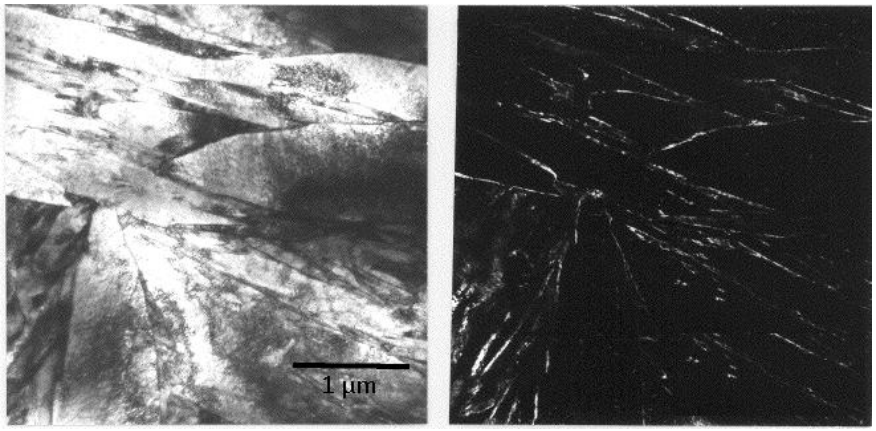
Too many micrographs, no magnification markers, fails to make effective use space available

# Martensite in Fe-4Mo-0.2C wt%




Good slide: has legible micrometre marker, reasonable sized and informative title, micrographs occupy the majority of space

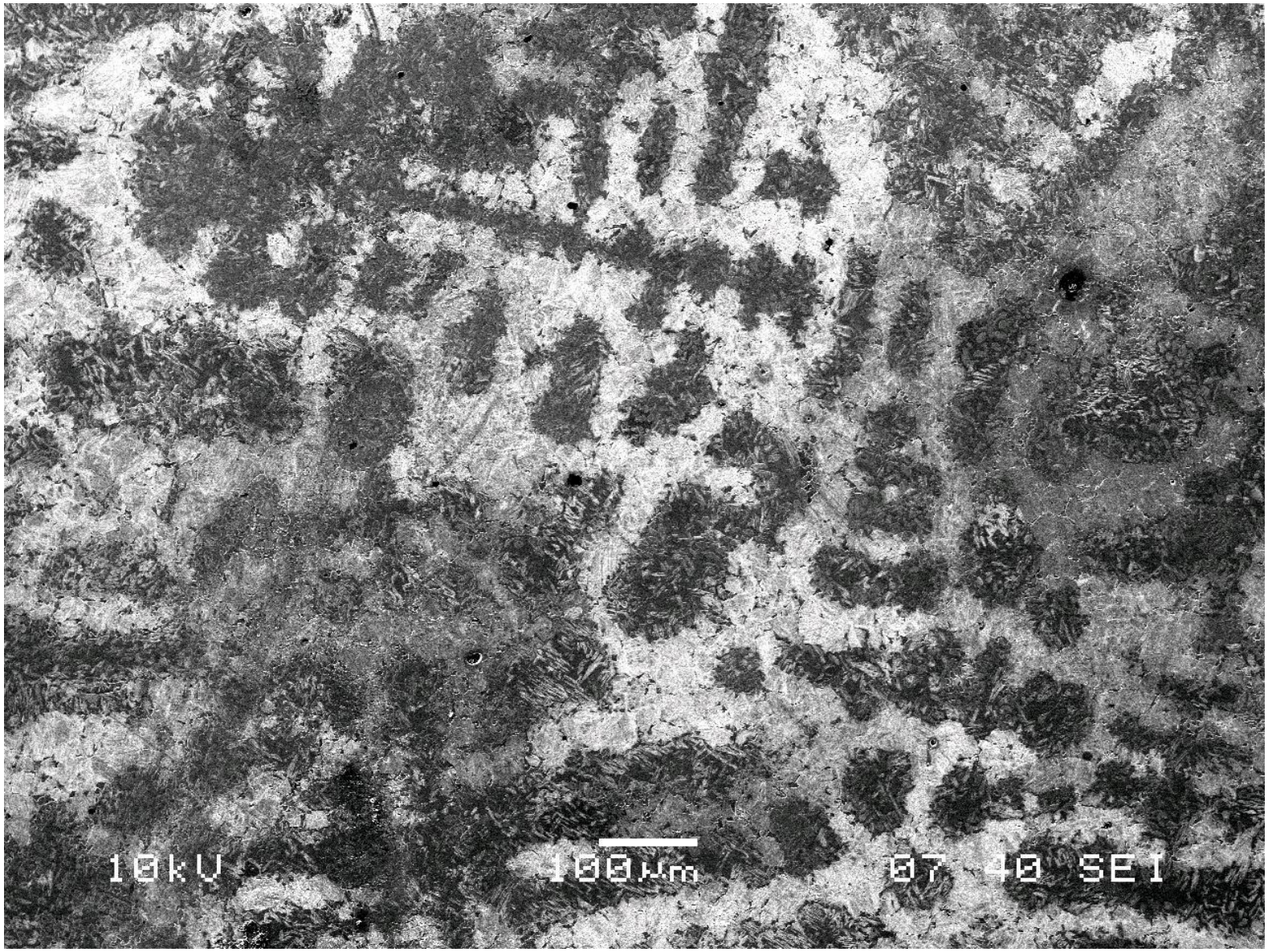
# Martensitic transformation in Fe-4Mo-0.2C % steel for undersea applications



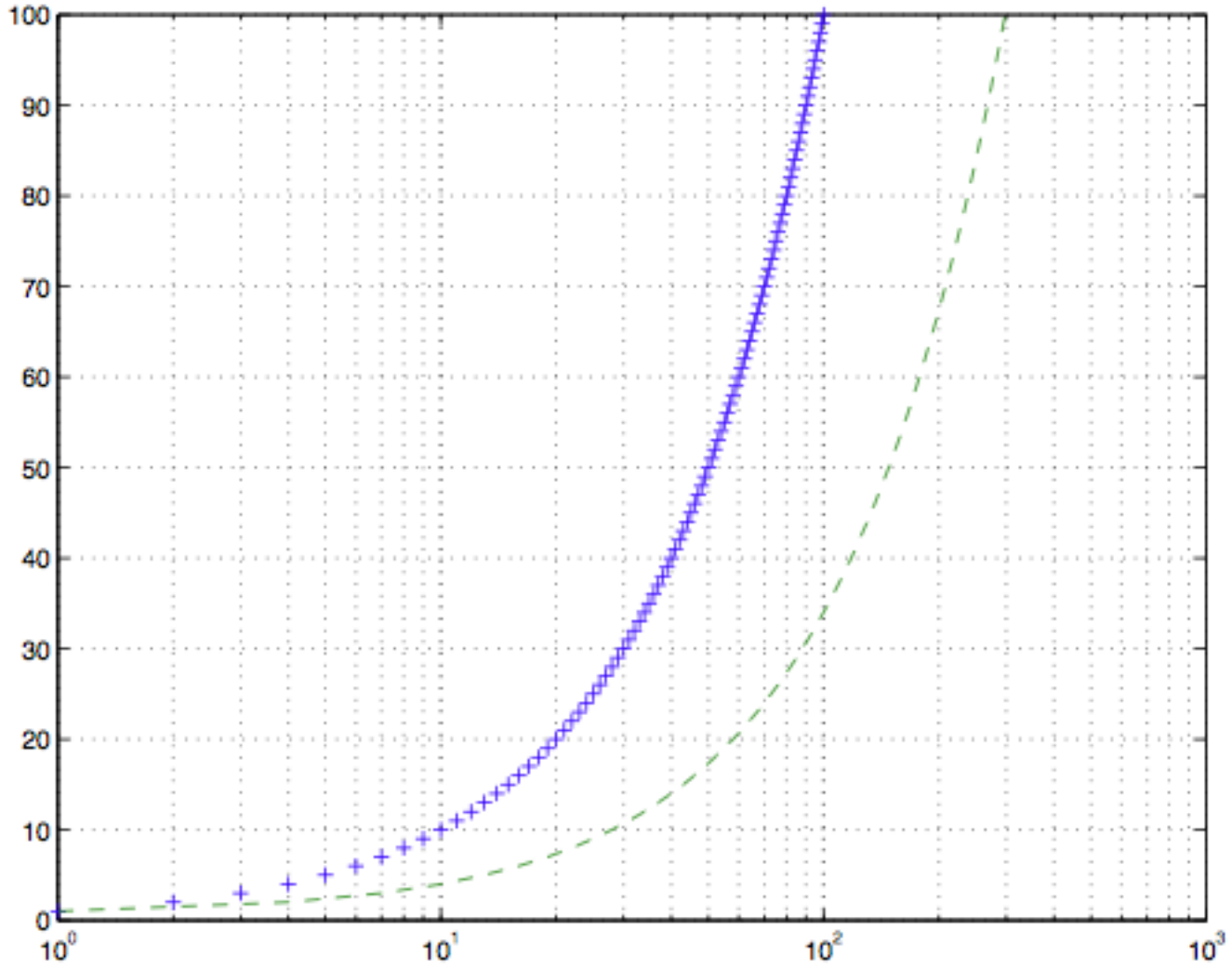

The steel was manufactured by melting pure constituents, cast, forged and extruded before swaging into 3 mm rods on a hot day.

The materials was homogenised at 1200°C for 30 days while protected in a non-oxidising foil, then air cooled, and again austenitised at 800°C for 30 s before quenching rapidly in water. The water was stirred while quenching but we are not sure that this made much of a difference.

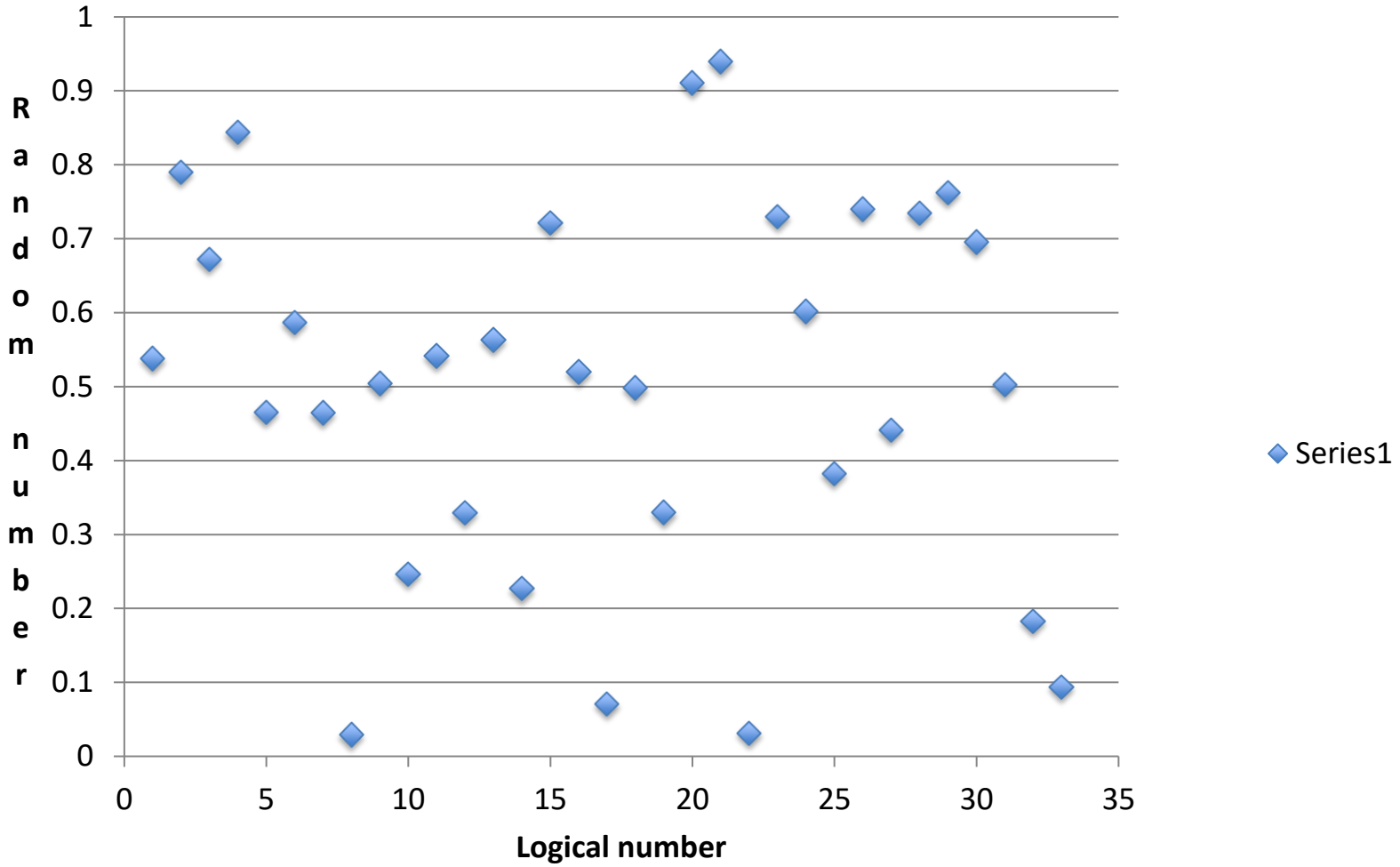
Bad slide: title has unnecessary detail, the slide has too much text of the type that is best limited to the written form of the paper, units of concentration incorrectly specified, magnification marker illegible.




Bad slide: there is unnecessary information at the bottom of this SEM image, and the micrometre marker is illegible.

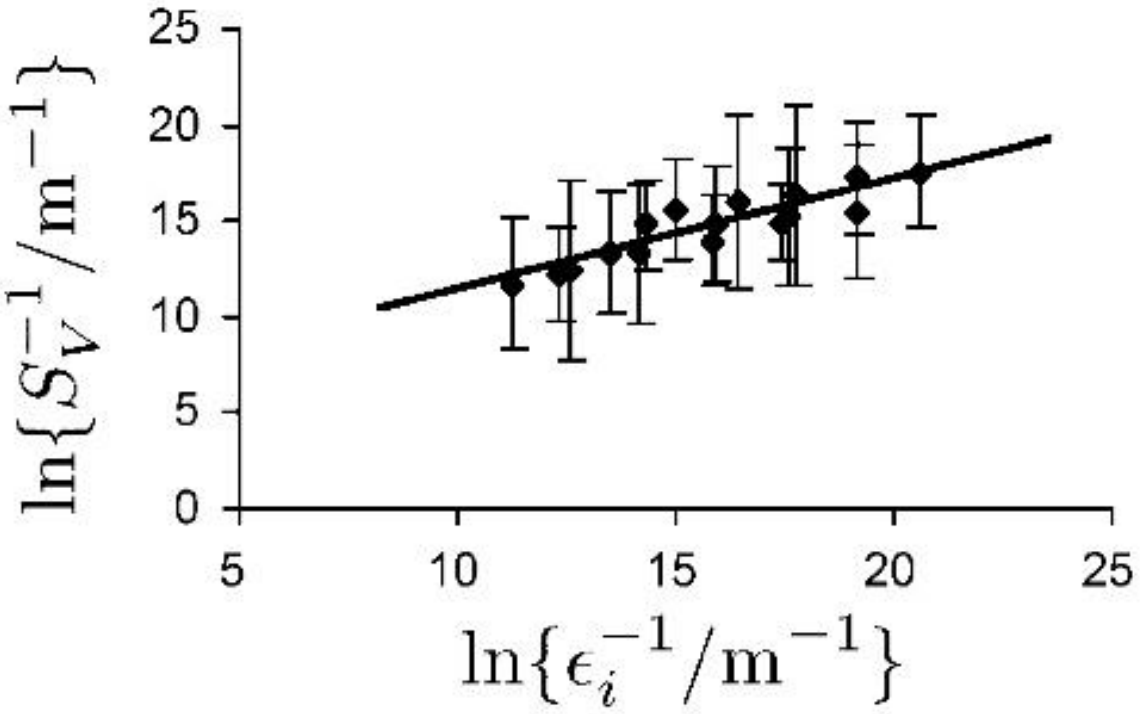



Bad slide: remove grid lines, axes labels missing, font too small.



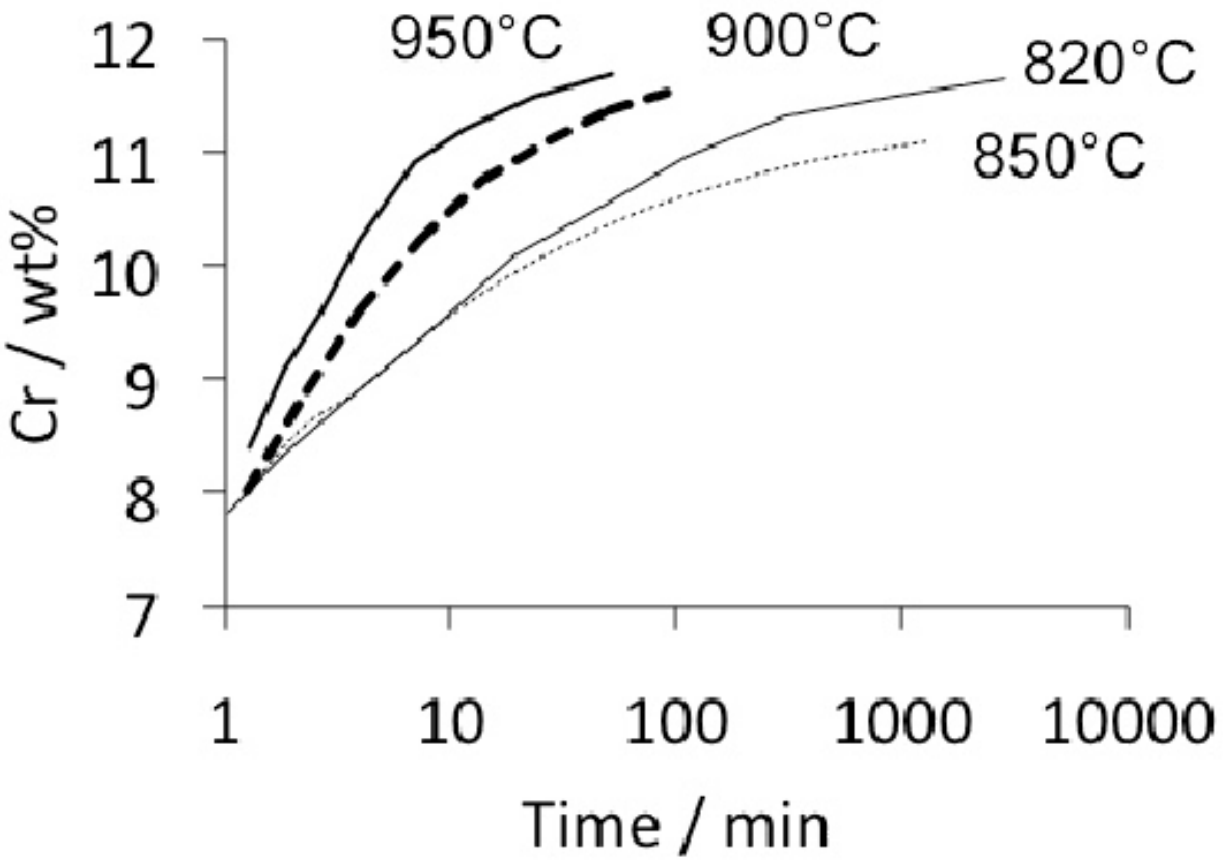

Bad slide: remove grid lines, fonts too small, key (Series 1) unnecessary.

# Surface per unit volume versus inverse strain




Good slide: legible fonts, clarity, mathematics and units properly presented.

# Avoid keys to graphs




Good slide: instead of a key describing which curve corresponds to a particular temperature, use text on graph. This enables the slide to be understood quickly.

# Conclusions

- It is not good to have long paragraphs in conclusions. The audience does not like to read such material, they can read that at home. A presentation should be brief in the use of text.
- Avoid long paragraphs in conclusions.

Bad slide: the first bullet point is too long. The second says the same thing. There should be no more than four conclusions, using at most, two slides.

# Thank YOU

Bad slide: this is a waste of a slide. Better to leave the conclusions slide in position whilst questions are asked.

# Follow the QRC-4-ESP project and QUEST project on social media!

- **QRC-4-ESP Project:**
  - Linkedin: https://www.linkedin.com/groups/14393078
  - BlueSky: https://bsky.app/profile/qrc-4-esp.bsky.social
- **QUEST Project:**
  - Linkedin: https://www.linkedin.com/company/quest-twinning-project
  - X: https://x.com/QUEST_Twinning

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