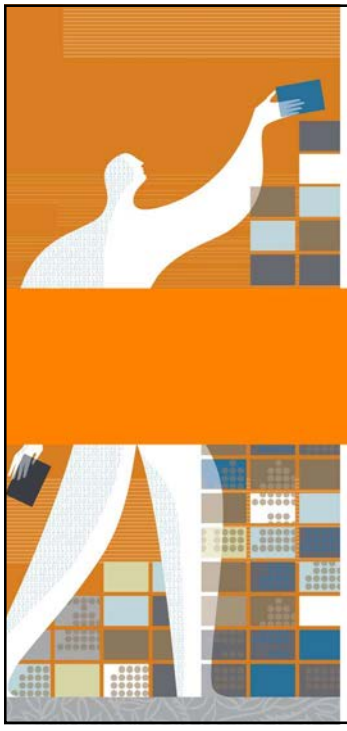
A Publisher's Guide to Writing and Publishing Scientific Manuscripts

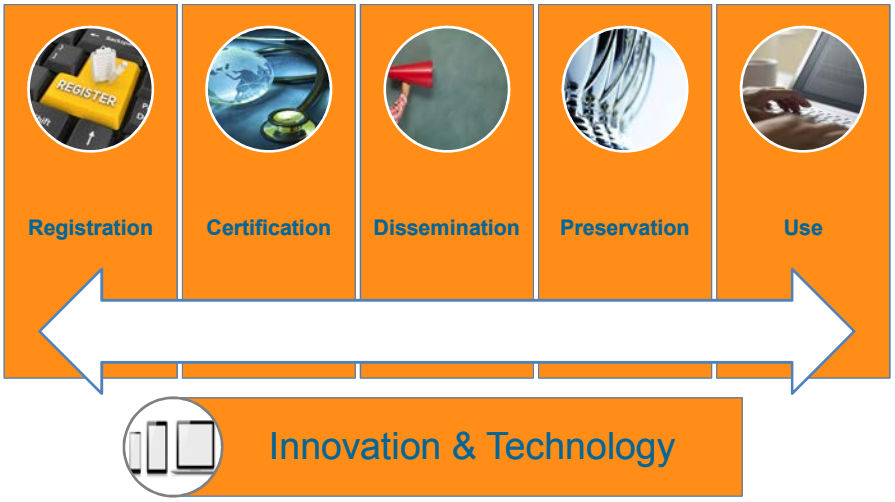
Presenters:
Mr Dean Eastbury, Executive Publisher, Elsevier, UK
Prof. Dr. Abdul latif Ahmad(USM)

XX February 2016



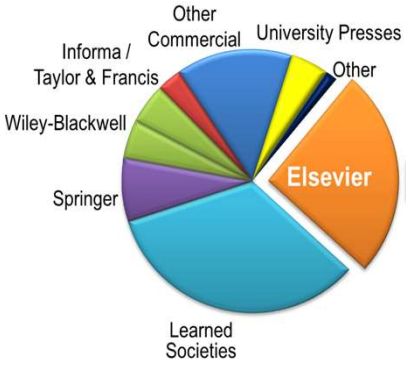
Scholarly Publishing
An introduction

The Publisher's Role



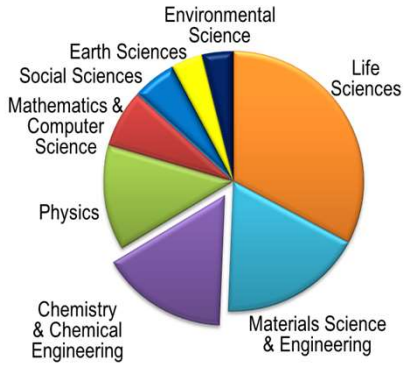
Scientific Publishing Industry

All scientific research articles



1.5 million English language research articles published globally each year

Elsevier – by disciplines



300,000+ English language research articles published with Elsevier every year

Publishing Connect

Impact Factors

Elsevier publishes 16 out of the top 20 journals in the category, Engineering Chemical*

Energy & Environmental Science	20.523
Progress in Energy and Combustion Science	19.220
Annual Review of Chemical and Biomolecular Engineering	8.676
Applied Catalysis B: Environmental	7.435
Journal of Catalysis	6.921
Applied Energy	5.613
Journal of Membrane Science	5.056
ACS Sustainable Chemistry and Engineering	4.642
Chemical Engineering Journal	4.321
Dyes Pigments	3.966
Catalysis Today	3.893
Desalination	3.756
Fuel	3.520
Journal of Industrial and Engineering Chemistry	3.512
Fuel Processing Technology	3.352
Separation & Purification Reviews	3.091
Journal of CO2 Utilization	3.091
Combustion and Flame	3.082
Journal of the Taiwan Institute of Chemical Engineers	3.000
Separation and Purification Technology	2.824

Elsevier also publishes 15 out of the top 20 most cited journals*

Industrial & Engineering Chemistry Research	50.551
Journal of Membrane Science	45.13
Journal of Catalysis	39.917
Energy & Environmental Science	36.159
Chemical Engineering Journal	34.076
Applied Catalysis B: Environmental	33.001
Chemical Engineering Journal	29.067
Fuel	28.939
Catalysis Today	28.069
Energy & Fuels	25.31
Desalination	24.618
Applied Energy	23.996
AIChE Journal	19.462
Journal of Food Engineering	18.581
Journal of Chemical & Engineering Data	17.706
Separation & Purification Technology	14.804
Powder Technology	13.626
Process Biochemistry	13.453
Combustion and Flame	12.685
Fluid Phase Equilibria	11.657

** Journal Citation Reports published by Thomson Reuters 2015*

Desalination
- Number of Citations in 2014: 24618
- 5 Year Impact Factor: 3.778
- SNIP: 2.145
- SJR: 1.761
- 3.48 weeks from submission to first decision
- 5.25 weeks from submission to final decision

www.elsevier.com/locate/desal

Journal of Membrane Science
- Number of Citations in 2014: 45130
- 5 Year Impact Factor: 5.323
- SNIP: 1.885
- SJR: 2.251
- 5.59 weeks from submission to first decision
- 8.67 weeks from submission to final decision

www.elsevier.com/locate/memsci

Journal of Water Process Engineering
- Launched in 2014
- 7.94 weeks from submission to first decision
- 9.81 weeks from submission to final decision

www.elsevier.com/locate/jwpe

Separation and Purification Technology
- Number of Citations in 2014: 14804
- 5 Year Impact Factor: 3.494
- SNIP: 1.467
- SJR: 1.171
- 6.3 weeks from submission to first decision
- 8.01 weeks from submission to final decision

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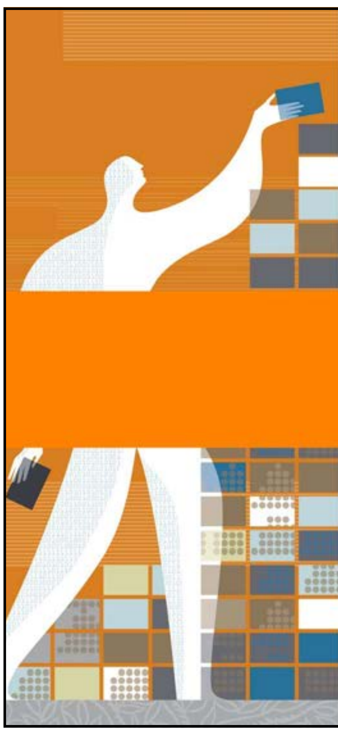
Academic publishing
The publishing cycle

peer-reviewed journals

Rejected papers

Editors

Publishing Connect



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Publishing Connect

Preparing your manuscript
Before you get started

What makes a strong manuscript?

- A clear, useful and exciting message,
  - novelty
  - contribution
- presented and constructed in a logical manner
- allowing readers to easily grasp the significance.

Types of manuscripts

Full articles
- Substantial, complete and comprehensive pieces of research

Letters or short communications
- Quick and early communications

Review papers and Current Opinions
- Often submitted by invitation

Micro Articles- NEW!
- SoftwareX, MethodsX, Data in Brief

Your supervisor or colleagues are also good sources for advice on manuscript types.

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Original Research Articles

- Standard for disseminating completed research findings
- Typically 8-10 pages, 5 figures, 25 references
- Draft and submit the paper to appropriate journal
- Good way to build a scientific research career

Sample Original Research Article Titles

"Hydrodynamic study of a liquid/solid fluidized bed under transverse electromagnetic field"

"Soluble nanoparticles as removable pore templates for the preparation of polymer ultrafiltration membranes"

"Kinetics of pressure oxidative leaching of molybdenite concentrate by nitric acid"

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Short Communications

- Quick and early communications of significant, original advances
- Much shorter than full articles.

Sample Short Communications Titles

"A proposed rapid screening technique for new reverse osmosis membranes"

"Dispersion of particulate clusters via the rapid vaporization of interstitial liquid"

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Review Articles

- Critical synthesis of a specific research topic
- Typically 10+ pages, 5+ figures, 80 references
- Typically solicited by journal editors
- Good way to consolidate a scientific research career

Sample Review Paper Titles

"Polymeric membranes incorporated with metal/metal oxide nanoparticles: A comprehensive review "

"Boron removal from saline water: a comprehensive review"

"A review of the beneficiation of rare earth element bearing minerals "

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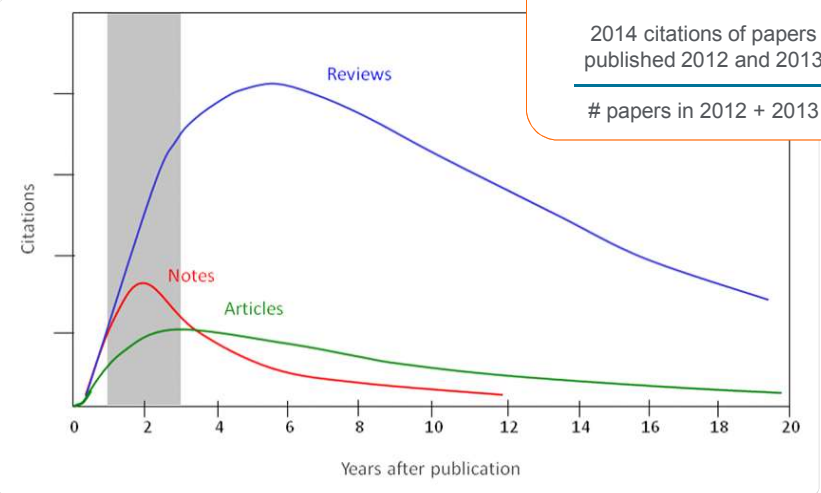
Citations per article type



2014 Impact Factor =

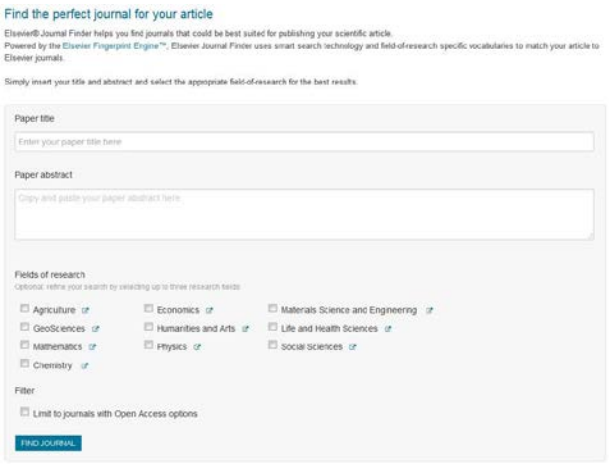
2014 citations of papers published 2012 and 2013

papers in 2012 + 2013

Publishing Connect

Choosing the right journal

Journal Finder Tool (journalfinder.elsevier.com/)



Articles in your references will likely lead you to the right journals for consideration.

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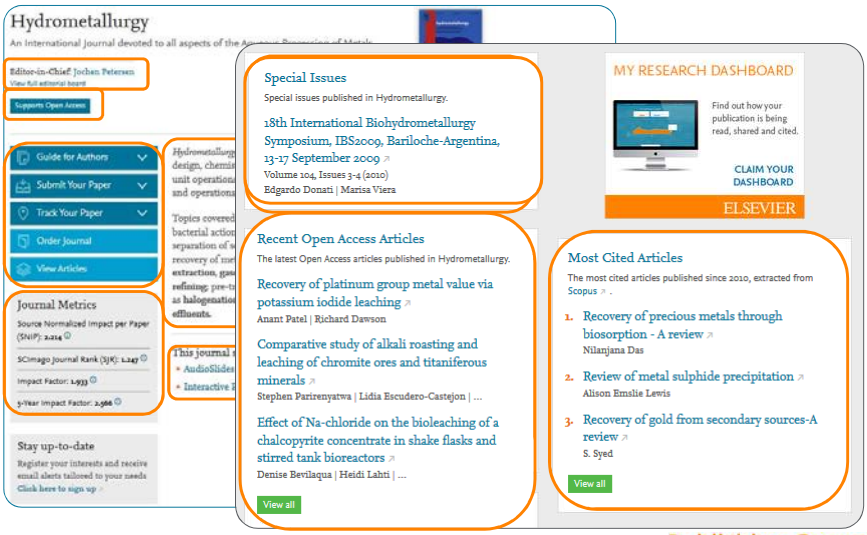
Choosing the right journal

Consult the Journal Homepage



Publishing Connect

Recap: the steps I need to take

- Determine
- Decide
- Choose
- Check

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Publishing Connect

Preparing your manuscript

Using proper scientific language

Why is language important?

- It can delay or block publication of work
- Proper English should be used

"It is quite depressive to think that we are spending millions in grants for people to perform experiments, produce new knowledge, hide this knowledge in an often badly written text and then spend some more millions trying to second guess what the authors really did and found."

Amos Bairoch, Nature Precedings
doi:10.1038/npre.2009.3092.1

Do publishers correct language?

No!
It is the author's responsibility...

*...but **resources** are available*

ELSEVIER WebShop
webshop.elsevier.com

Manuscript language: Overview

- Accurate
- Concise
- Clear
- Objective

Manuscript language: Sentences

An example of what NOT to do:

"If it is the case, intravenous administration should result in that emulsion has higher intravenous administration retention concentration, but which is not in accordance with the result, and therefore the more rational interpretation should be that SLN with mean diameter of 46nm is greatly different from emulsion with mean diameter of 65 nm in entering tumor, namely, it is probably difficult for emulsion to enter and exit from tumor blood vessel as freely as SLN, which may be caused by the fact that the tumor blood vessel aperture is smaller."

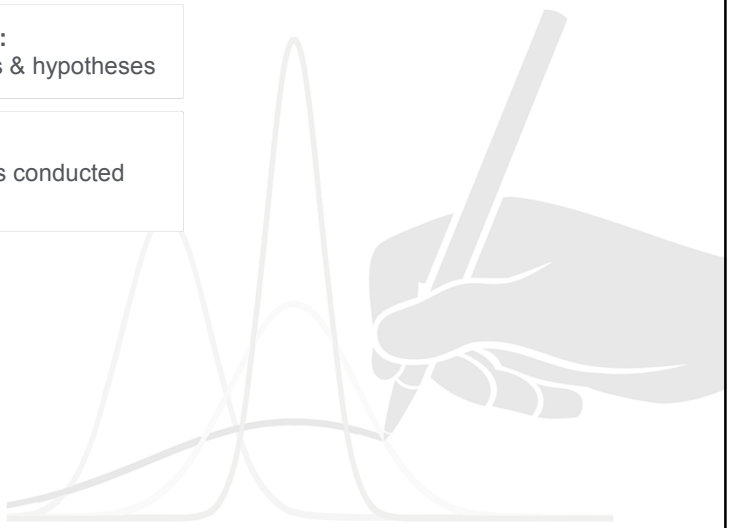
A possible modification:

"It was expected that the intravenous administration via emulsion would have a higher retention concentration. However, the experimental results suggest otherwise. The SLN entered the tumor blood vessel more easily than the emulsion. This may be due to the smaller aperture of the SLN (46 nm) compared with the aperture of the emulsion (65 nm)."

Manuscript language: Tenses

Present tense:
for known facts & hypotheses

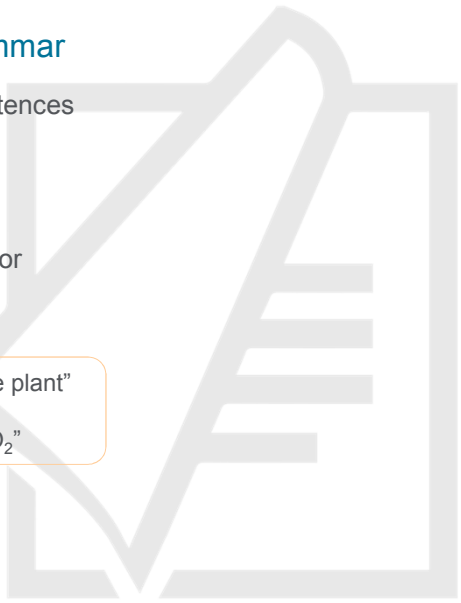
Past tense:
for experiments conducted & results



Manuscript language: Grammar

- Use active voice to shorten sentences
- Avoid abbreviations
- Minimize use of adverbs
- Eliminate redundant phrases
- Double-check unfamiliar words or phrases

Passive: "CO_2 was consumed by the plant"
versus
Active: "the plant consumed CO_2"

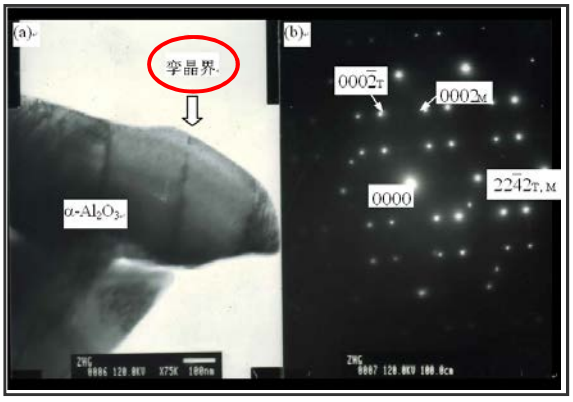


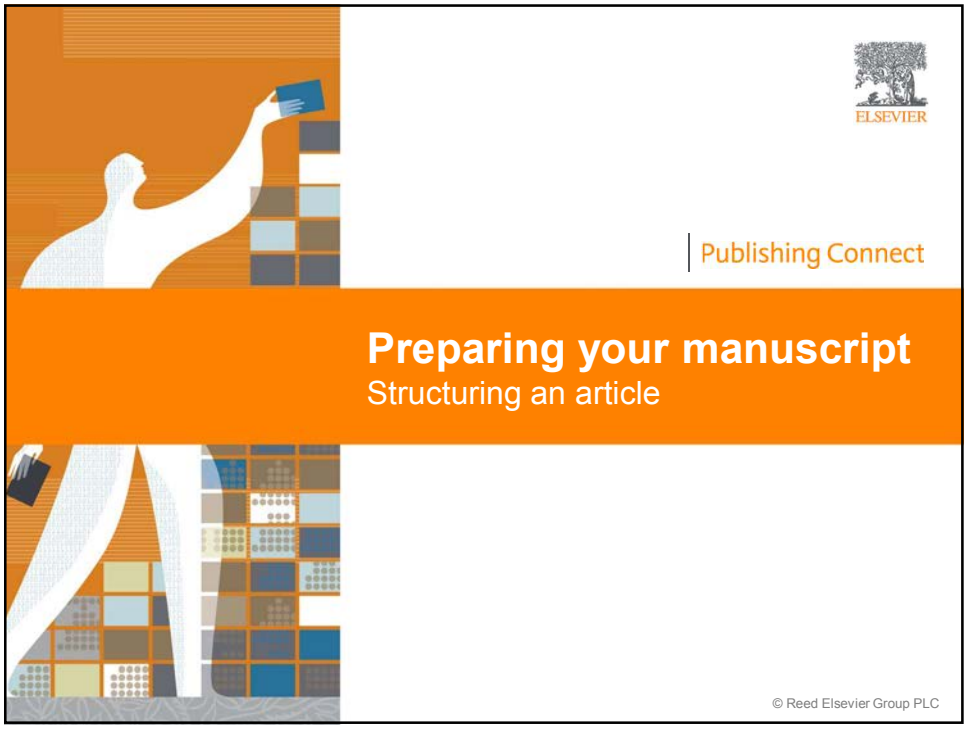
Recap: Am I using proper manuscript language?

- Allows for an easy understanding of your work
- Follow specifications in Guide for Authors
- Use short sentences, correct tenses and correct English grammar
- Have a native English speaker check your manuscript or use a language editing service

Language

Finally, you should use English throughout the manuscript, including figures!

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Preparing your manuscript
Structuring an article
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Guide for Authors
MINERALS ENGINEERING
Guide for Authors
Author information pack
Submit your paper
Track your paper
Order journal
View articles
Abstracting/indexing
Editorial board
• Your Paper Your Way
INTRODUCTION
BEFORE YOU BEGIN
• Ethics in publishing
• Conflict of interest
• Submission declaration and verification
• Changes to authorship
• Article transfer service
• Copyright
• Role of the funding source
• Funding body agreements and policies
• Open access
• Green open access
• Language (usage and editing services)
• Submission
• Referees
PREPARATION
• NEW SUBMISSIONS
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• Formatting requirements
• REVISED SUBMISSIONS
• Article structure
• Essential title page information
• Abstract
• Graphical abstract
• Highlights
• Abbreviations
• Acknowledgements
• Nomenclature and units
• Footnotes
• Artwork
• Tables
• References
• Video data
• AudioSlides
• Supplementary material
• Interactive plots
• Submission checklist
AFTER ACCEPTANCE
• Use of the Digital Object Identifier
• Online proof correction
• Offprints
AUTHOR INQUIRIES
Reference Simplification
Your Paper, Your Way
content innovation
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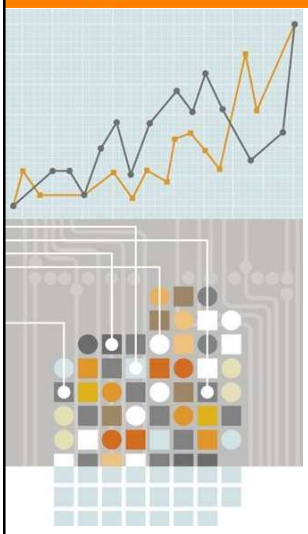


General structure of a research article

- Title
- Abstract
- Keywords

informative, attractive, effective

How do you search for a paper?

Main Text (IMRAD)

- Introduction
- Methods
- Results and
- Discussion

Make sure each section fulfills its purpose clearly and concisely

- Conclusion
- Acknowledgements
- References
- Supporting materials

The process of writing – building the article

- Title and abstract
- Conclusion
- Introduction
- Methods
- Results
- Discussion
- Figures/Tables (your data)

Effective manuscript titles

A good title should contain the *fewest* possible words that *adequately* describe the content of a paper

- Begin with the subject of the paper
- Identifies main issue of the paper
- Are accurate, unambiguous, specific, and complete
- Are as short as possible
- Does not use rarely-used abbreviations

Original Title	Revised	Remarks
Preliminary observations on the effect of Zn element on anticorrosion of zinc plating layer	Effect of Zn on anticorrosion of zinc plating layer	Long title distracts readers. Remove all redundancies such as "observations on", "the nature of", etc.
Action of antibiotics on bacteria	Inhibition of growth of mycobacterium tuberculosis by streptomycin	Titles should be specific. Think to yourself: "How will I search for this piece of information?" when you design the title.
Fabrication of carbon/CdS coaxial nanofibers displaying optical and electrical properties via electrospinning carbon	Electrospinning of carbon/CdS coaxial nanofibers with optical and electrical properties	"English needs help. The title is nonsense. All materials have properties of all varieties. You could examine my hair for its electrical and optical properties! You MUST be specific. I haven't read the paper but I suspect there is something special about these properties, otherwise why would you be reporting them?" – *the Editor-in-chief*

Keywords

- Are used by indexing and abstracting services
- Are the labels of the manuscript
- Should complement the keywords in the title
- Use only established abbreviations (e.g. DNA)

Article title	Keywords
"Electrochemical bioleaching of high grade chalcopyrite flotation concentrates in a stirred bioreactor" doi:10.1016/j.hydromet.2010.05.001	Acidophilic bacteria; Bioreactor; Chalcopyrite; Electrochemical bioleaching

Abstract

- This is the advertisement of your article
- A clear abstract will strongly influence whether or not your work is considered
- Make it interesting and understandable
  - What has been done?
  - What are the main findings?
- **Most publishers make the abstract freely available**

Follow the Rule of 10
1-2 sentences: aim
2-3 sentences: materials & methods
2-3 sentences: results
2 sentences: discussion/conclusions

Graphical Abstracts and Research Highlights

Effect of pH on Cu, Ni and Zn removal by biogenic sulfide precipitation in an inversed fluidized bed bioreactor Original Research Article

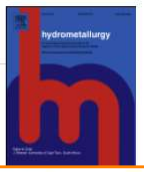
Pages 94-100

Suthee Janyasuthiwong, Eldon R. Rene, Giovanni Esposito, Piet N.L. Lens

Close research highlights | PDF (919 K)

Highlights

- pH affects sulfide production and metal precipitation in an inversed fluidized bed (IFB) reactor.
- More than 97% of Cu and 94.0% of Zn were removed at pH 5.0.

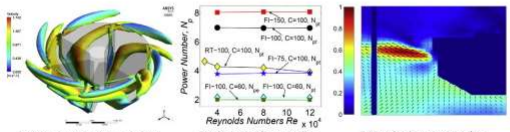


Numerical and experimental investigation of single phase flow characteristics in stirred tanks using Rushton turbine and flotation impeller Original Research Article

Pages 156-167

Manjunath Basavarajappa, Teri Draper, Pal Toth, Terry A. Ring, Sanja Miskovic

Abstract | Close graphical abstract | Research highlights | PDF (2409 K)



Swirling strength contour | Power number vs. *Re* | PIV velocity vector plot

Introduction

- You are telling a story. Introduction sets the scenario.
- Do not attempt to summarize the whole field (it is not possible!)
- Quote what is necessary for background and to give credit to previous works. Do not add superfluous references.
  - Editors may choose reviewers from cited work

Introduction is especially important!

A high proportion of “lack of novelty” rejections are made after reading the abstract, introduction and conclusions.

Introduction (continued)

- Give a clear **motivation** for the work. *Explain why before explaining how.*
- Explain what is **novel** *compared to* what is already available in the *literature*
- High level description of your approach. Why is it *important*? Why is it *difficult*?
- What are the *alternatives*? Why is yours **different** or **better**?
- What are the gaps and how are you going to fill them? *What is your "**silver bullet**"?*
- At the end of the introduction the *reader knows the problem* and maybe the *solution you propose*

Introduction Recap

Provide a brief context to the readers	You are telling a story. Introduction sets the scenario.
Address the problem	Do not attempt to summarize the whole field (it is not possible!)
Identify the solutions and limitations	What is your motivation? What are the gaps in knowledge?
Indicate novelty of approach	Why is your approach different or better? How do you plan to fill the gaps?
Offer clear hypothesis and proposed solution	At the end of the introduction, the reader should *know the problem* and the *solution you propose*.

Methods

- Include detailed information. The reader should be able to reproduce the experiment.
- Previously published procedures need not be described in depth:
  - Cite methods and note any changes to the protocol and/or
  - Provide detailed methods in Supplemental Material
- Identify the equipment and materials used
  - Provide source and related product information (company, molec. weight, etc.)
- Write out full chemical/biological compound names (followed by abbr.) then use abbreviations throughout paper
  - Make sure that all symbols are defined.

Describe how the problem was studied

Ethics committee approval

- Experiments on humans or animals must follow applicable ethics standards
- Approval of the local ethics committee is required and should be specified in the manuscript, covering letter or the online submission system
- Editors can make their own decisions on ethics

Methods Recap

- Describe how the problem was studied
- Include detailed information
- Do not describe previously published procedures
- Identify the equipment and describe materials used

- Provide source and related product information (company, molec. weight, etc.)
- Write out full chemical and biological compound names first (followed by abbreviation).
- Make sure that all symbols are defined.
- Check Guide for Authors regarding formatting of 'units'

Results

- The main findings
  - Analytical description of data from experiments described in the Methods section.
  - Findings/data of secondary importance should be captured in Supplementary Materials
  - Minimal interpretation of results and/or comparison with literature unless the journal combines the Results and Discussion sections
- Results of the statistical analysis
- Figures and tables

You are telling a story.
Keep the narrative flowing, concise, well organized.

Results: Figures and Tables

- Figures and tables are the most efficient way to present results
  - Results should be presented in a non-redundant way
- Captions and legends should be self-explanatory; figures should be able to stand alone
  - *What is the take home point?*
- Maximize space; make sure final versions of figures can be easily read (watch use of legends)
- Use consistent formatting between figures
  - Plots: labels, scale and symbols
  - Micrographs: scale bar, point out key features

Results: Figures

Journal of Membrane Science
Volume 481, 1 May 2015, Pages 1–8

Permeability thickness dependence of polydimethylsiloxane (PDMS) membranes

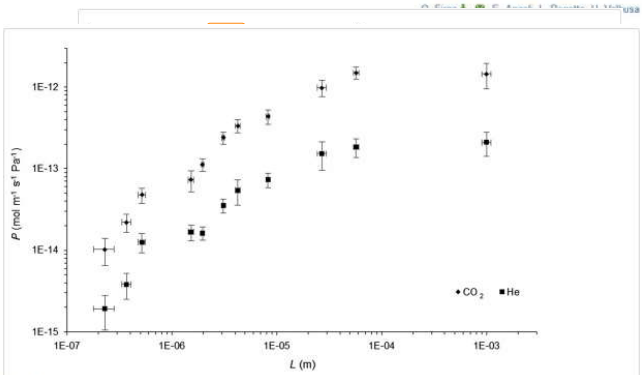


Fig. 6.
PDMS permeability *P* against thickness membrane *L*. ■ He/PDMS and ♦ CO_2/PDMS. Section 2 reports error analysis. The upstream pressure is p_u=9×10⁴ Pa, the temperature *T*=293 K.

Figure options

Platinum (Pt) (continuous line) (c) CO_2/PDMS data compared with model B (dotted line) (d) He/PDMS data compared with model B (dotted line).

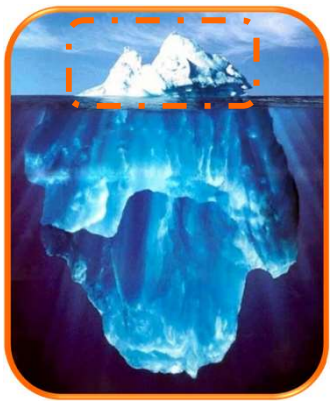
Results - Recap

- Be clear and easy to understand
- Highlight the main findings
- Feature unexpected findings
- Provide statistical analysis
- Include illustrations and figures

Analytical description of data with minimal interpretation of results and/or comparison with literature

This is not a thesis!

Do not try to fit everything in!



Contributed by Diego Gutierrez

Figures and Tables – Recap

- Easy to read – maximize space
- Consistent formatting between figures
- Plots: labels, scale and symbols
- Micrographs: scale bar, key features, image manipulations
- Self-explanatory captions and legends – clear take home point

Discussion

- Critical interpretation of results
- Make the discussion correspond to the results
- Do not make statements unsupported by your data.
- Compare your results to published results

- How does your data relate to the "big picture" or applications?
- Can you identify a mechanism or form new hypotheses?

Conclusion

- Not the same as a summary!
- Give conclusions that are supported by your results
- Try to end in a positive tone
- Do not overreach. Statements such as "this method can potentially be used…" do not belong to the conclusions (and often irritate referees)
- Provide justification for the work
  - Relationship between the objective and key findings
- Advance the present state of knowledge
- Suggest future experiments

How the work advances the field from the present state of knowledge

Acknowledgments

- Advisors and undergrad. support
- Financial supporters and funders
- Proof readers and typists
- Suppliers who may have donated materials

Ensures those who helped in the research are recognized

References

- Cite the main scientific publications on which your work is based
- Do not use too many references
- Always ensure you have fully absorbed material you are referencing
- Avoid excessive self citations
- Avoid excessive citations of publications from the same region
- Conform strictly to the style given in the guide for authors*

* Some journals will format references for you!

Authorship

General principles for who is listed first

- First Author
  - Generally conducts and/or supervises data generation
  - Sometimes puts paper together and submits to journal
- Corresponding author
  - The first author or a senior author from the institution. Considered "mainly responsible" for the contents (but responsibility is shared!).
  - Somebody with a permanent e-mail address!
  - Sometimes puts paper together and submits to journal

Authorship

- ✓ Corresponding author
- ✓ First author
- ✓ **Good** listing principle – spelling of names
- ✘ Ghost authorship
- ✘ Gift authorship
- ✘ **Poor** listing procedure

The International Committee of Medical Journal Editors (Vancouver Group) declared that an author must:

1. **substantially contribute** to conception and design, or acquisition of data, or analysis and interpretation of data;
2. **draft** the article or **revise** it critically for important intellectual content; and
3. **give their approval** of the final version to be published.
4. **ALL 3 conditions** must be fulfilled to be an author!

Now that you think you have finished…

- Read the paper again and circulate to all co-authors. Be critical yourself and accept criticism from others.
- Show it to your advisors
- Try to be in the position of a reader/reviewer.
- Forget what you know, read only what is written. Yes, it is difficult. Just keep trying.
- If possible, have someone else you trust to comment on the paper.
- If you need to explain something verbally, then you probably need to rewrite that part.

Cover Letter – very important!

- Your chance to speak directly to the editors
- Explain the main findings and motivation
- Highlight novelty and significance of results
- State final approval of all co-authors
- State prior reviews, revisions, etc.
- Note any special requirements
  - Referees: experts, not collaborators
- State any conflicts of interest

Cover Letter

Professor H. D. Schmidt
School of Science and Engineering
Northeast State University
College Park, MI 10000
USA

Dear Professor Schmidt,

Enclosed with this letter you will find en elect
entitled "Mechano-sorptive creep under compres
model" by John Smith and myself. This is an
previously nor simultaneously in whole or in pa
Both authors have read and approved the final ver

Mechano-sorptive is sometimes denoted as
experimentally observed that the creep of paper
cyclic moisture content. This is of large practical
The present manuscript describes a micromecha
level that is able to capture the experimentally ob
difference between mechano-sorptive creep in ter
John Smith is a PhD-student who within a year w
present paper will be a part of that thesis.

Three potential independent reviewers who have e
this paper are:

Dr. Fernandez, Tennessee Tech, email1@universit
Dr. Chen, University of Maine, email2@university.
Dr. Singh, Colorado School of Mines, email3@univ

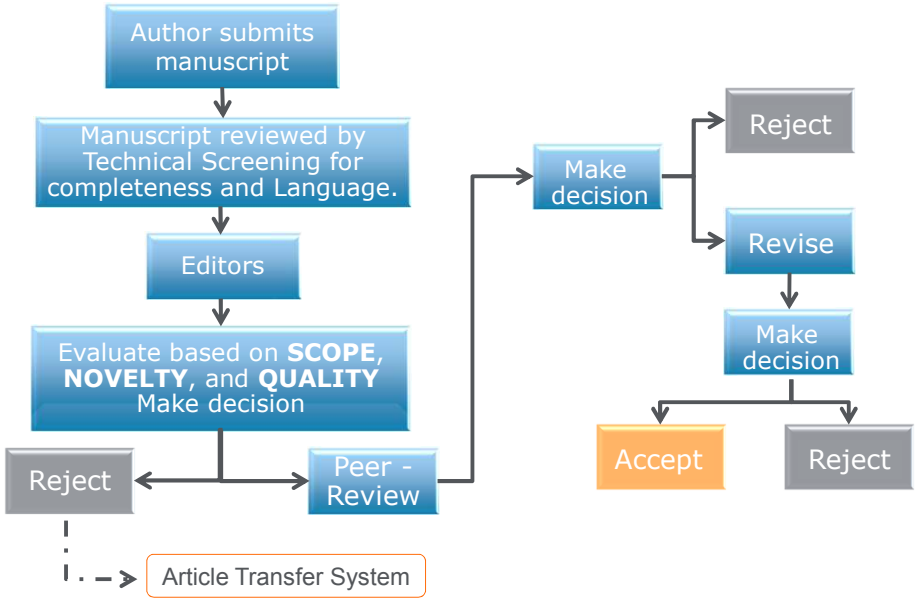
I would very much appreciate if you would consid
the *International Journal of Science*.

Final approval from all authors

Explanation of importance of research

Suggested reviewers

Understand the peer-review process



Peer Review

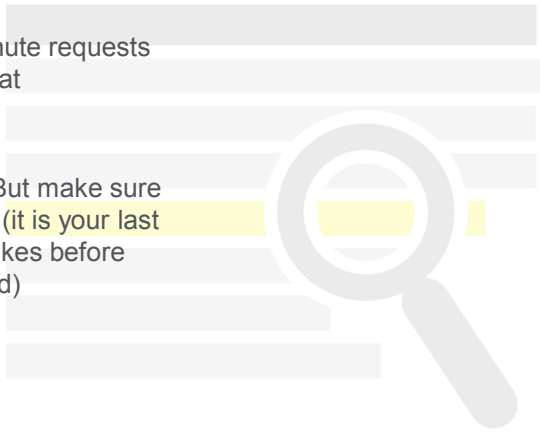
- Helps to determine the quality, validity, significance, and originality of research
- Helps to improve the quality of papers
- Publishers are outside the academic process and are not prone to prejudice or favour
- Publishers facilitate the review process by investing in online review systems and providing tools to help Editors and Reviewers

Peer Review Decisions

- Rejection
  - Learn from feedback provided and improve work for re-submission
- Minor Revision
  - Good job. Make the edits and resubmit quickly.
- Major Revision
  - Answer comments, one by one, and explain changes made or not made
  - If you feel a remark is not justified or a request is unreasonable, say so, but substantiate your response.
  - Submit a revised version highlighting where changes have been made

After Acceptance

- Be diligent with any last minute requests (e.g. quality of figures, format adjustments).
- Return the proofs quickly. But make sure you revise them thoroughly (it is your last chance to correct any mistakes before your manuscript is published)



What leads to acceptance???

- Attention to details
- Check and double check your work
- Consider the reviewers' comments
- English must be as good as possible
- Presentation is important
- Take your time with revision
- Acknowledge those who have helped you
- New, original and previously unpublished
- Critically evaluate your own manuscript
- Ethical rules must be obeyed

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Thank you

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