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Best Practices for Writing Scientific Articles

Ganjar Fadillah, Ph.D

15 May 2025



Short Introduction Education & Experiences



Academic info

2011 - 2015 | Bachelor of Science

Chemistry Department, Universitas Sebelas Maret

"Anti reflection ZnO coated TiO₂ Surface for photoelectrochemical devices"

2016 - 2018 | Master of Science (LPDP)

Chemistry Department, Institut Teknologi Bandung

"Molecularly imprinted polymers modified carbon electrode for electrochemical sensor"

2020 - 2023 | Doctor of Philosophy (MEXT/Monbusho U to U)

Chemistry Department, Kumamoto University, Japan

"Electrodialytic device with molecularly imprinted membrane for separation enantiomer compounds"

H-index Scopus: 23



Other achievements

2018 - Metrohm Young Chemist Awards

2023 - Kyushu Analytical Chemistry Awards for Young Researcher (JSAC)

2023 - The President's Prize Graduation Kumamoto University

2023 - Top 2% World Scientist by Stanford University category Single year (2022)

2024 - Top 2% World Scientist by Stanford University category Single year (2023)

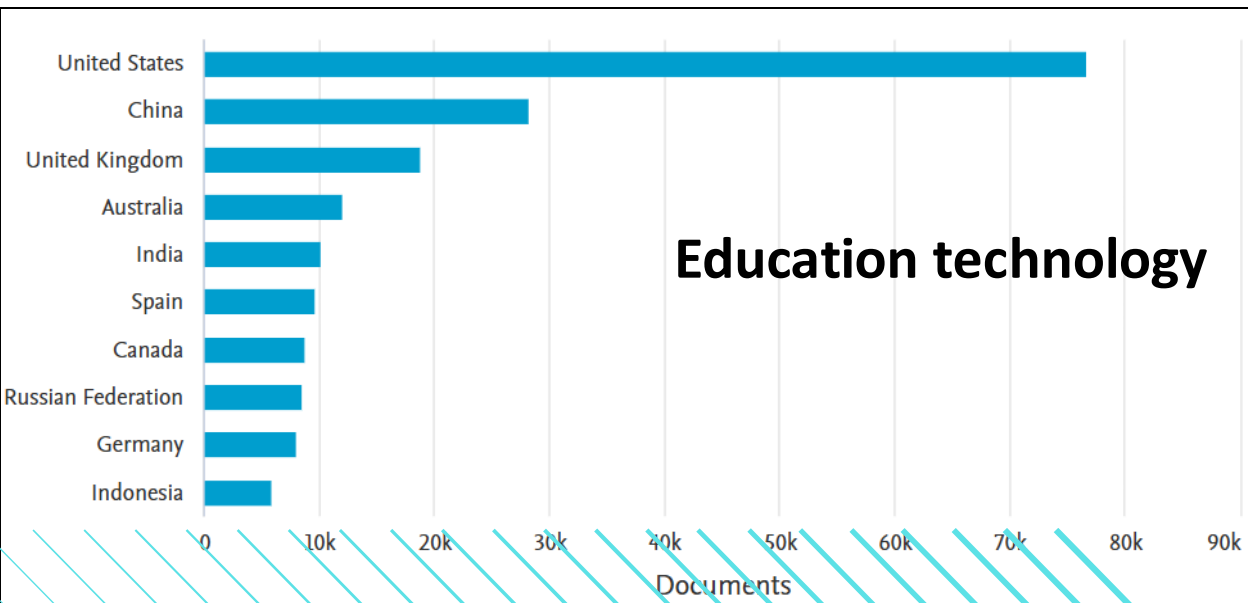
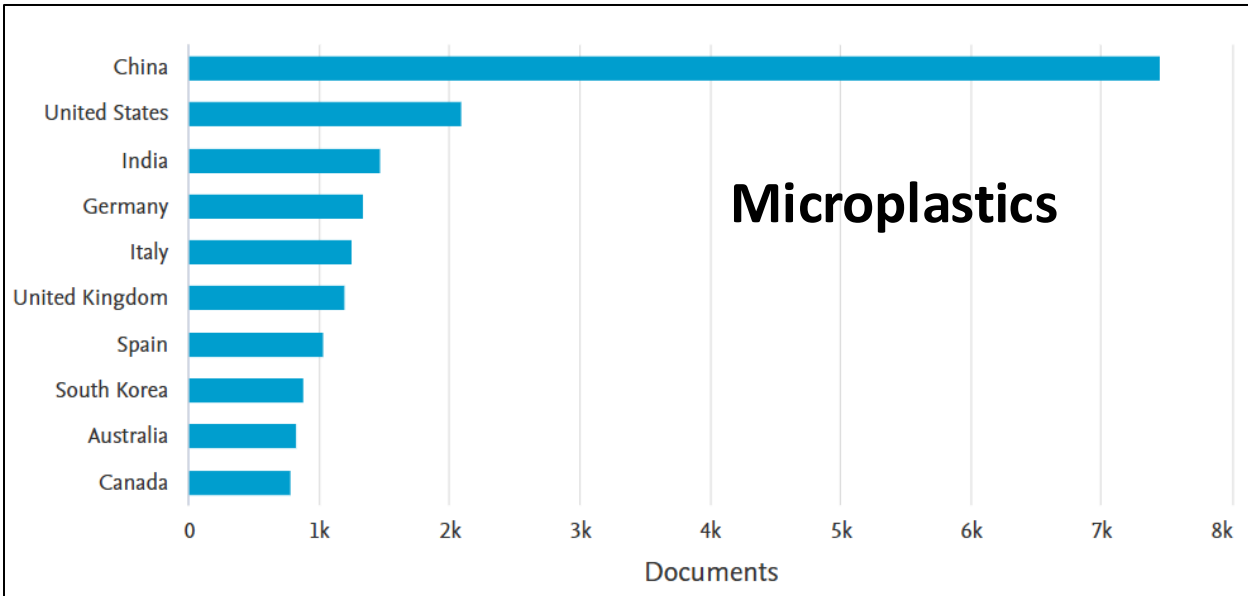


Academic activity

1. Editor members of Communication in Science and Technology (Scopus, Q2)
2. Editor-in-chief of Indonesian Journal of Chemical Analysis (IJCA) (SINTA 3, DOAJ)
3. Member of IROAST Kumamoto University
4. Reviewer:
 - Carbohydrate polymers
 - Environmental pollution
 - Industrial Crops and Products
 - Inorganic Chemistry Communications
 - International Journal of Electrochemical Science
 - Journal of Industrial and Engineering Chemistry
 - Journal of Water Process Engineering
 - Material Science and Engineering: B
 - Trends in Environmental Analytical Chemistry
 - Chemical Engineering Research and Design
 - Nature Scientific Report

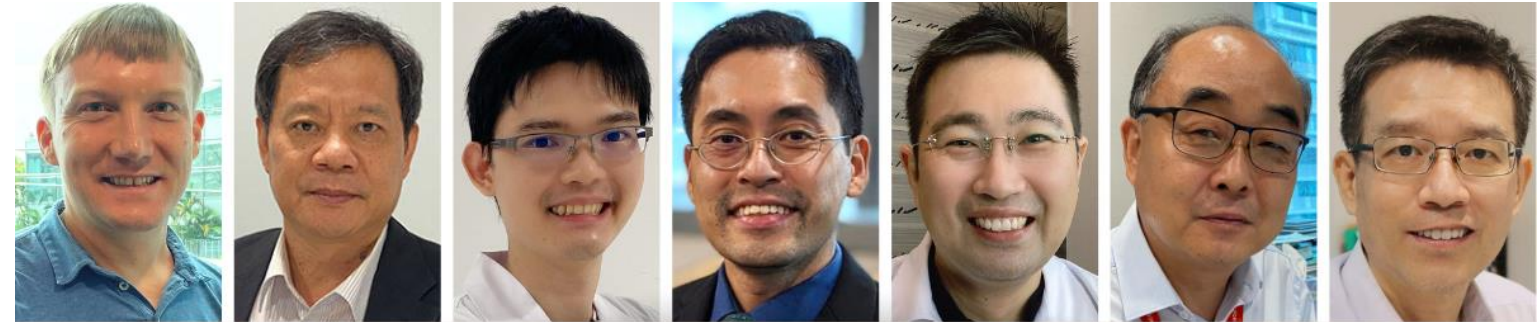
Importance of publication

SPREADING KNOWLEDGE AND TECHNOLOGY

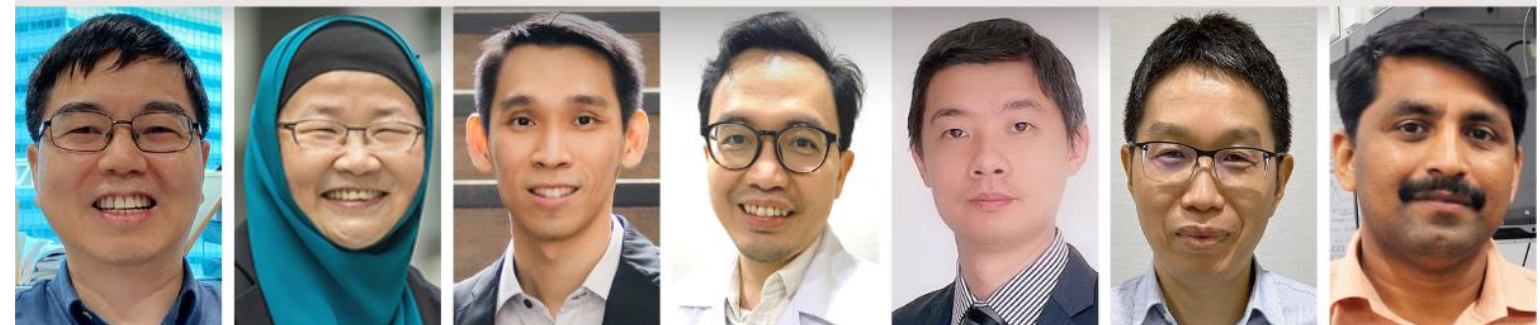


Source: Scopus, 2025

RECOGNITION AND CREDIBILITY



IMRE RESEARCHERS AMONG WORLD'S TOP 2% SCIENTISTS IDENTIFIED BY STANFORD UNIVERSITY



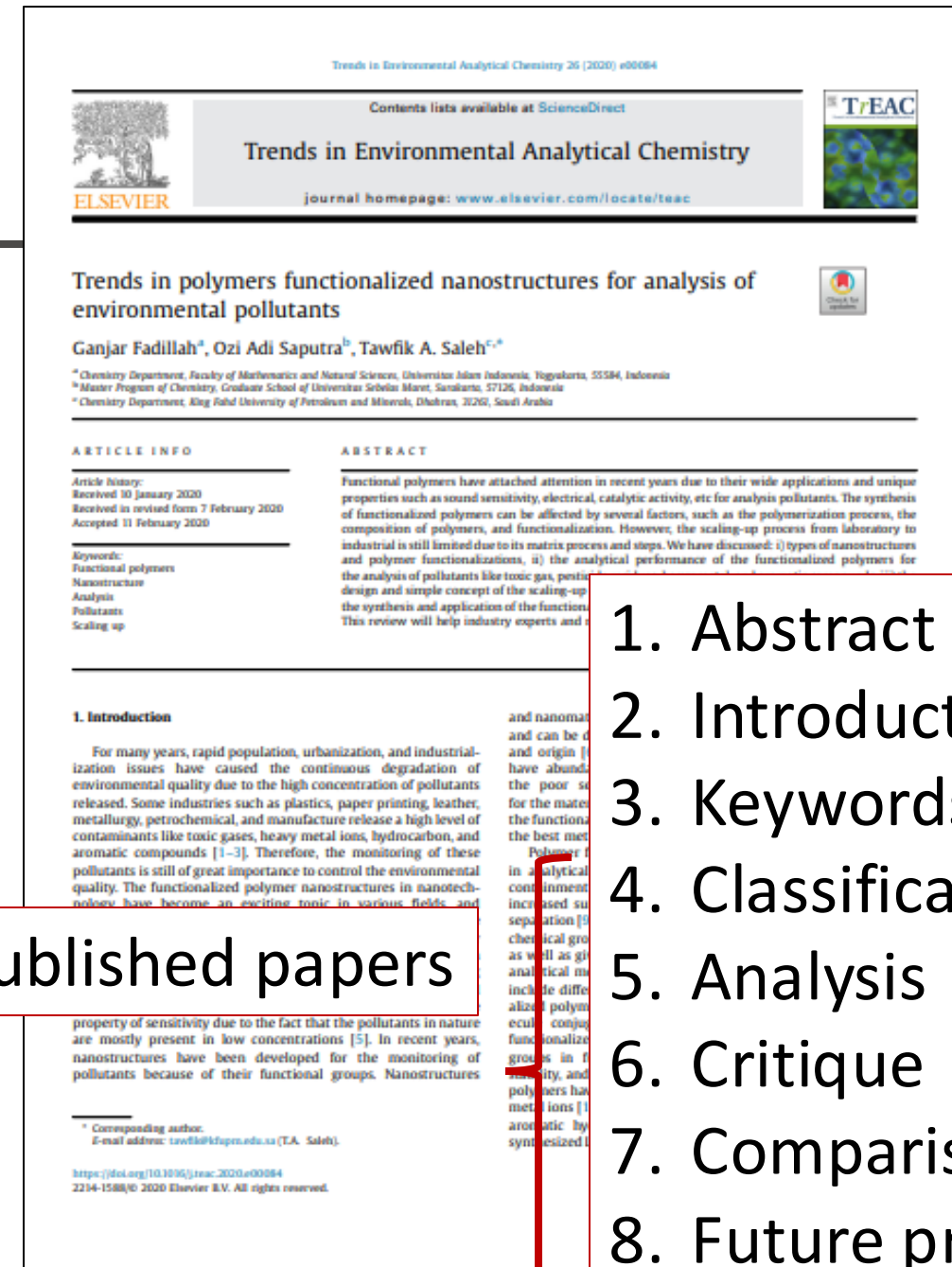
RESEARCH ARTICLE



1. Title
2. Abstract
3. Keywords
4. Introduction
5. Methods
6. Results and discussions
7. Conclusion
8. References
9. SI

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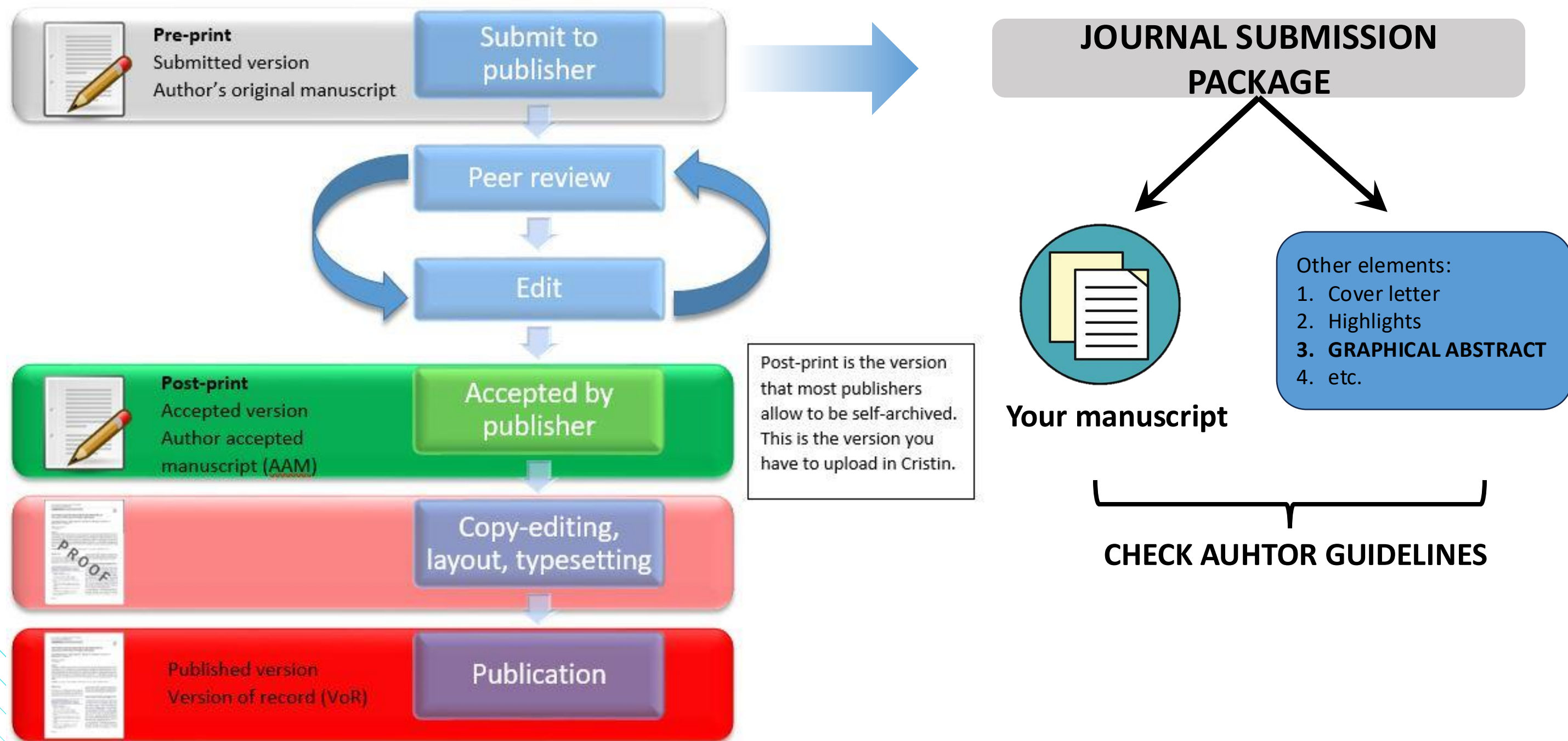
REVIEW ARTICLE



Published papers

1. Abstract
2. Introduction
3. Keywords
4. Classification
5. Analysis
6. Critique
7. Comparison
8. Future prospective
9. References

Publication process



Research your fields

1

Read recent articles

2

Consider journal ranking

3

Analyze submission guidelines

4

Identify specialized journal

5

Seek advice form colleagues and mentors

6

Use journal matching tools

7

Compare publication time

8

Be realistic

9

Journal submission strategies

How to publish in Reputable International Journals?



Editor's point of view



Author's point of view



Editor's point of view

Selain *Quality* dan *Novelty*, beberapa pertimbangan seorang editor memproses sebuah manuscripts:





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Editor's point of view

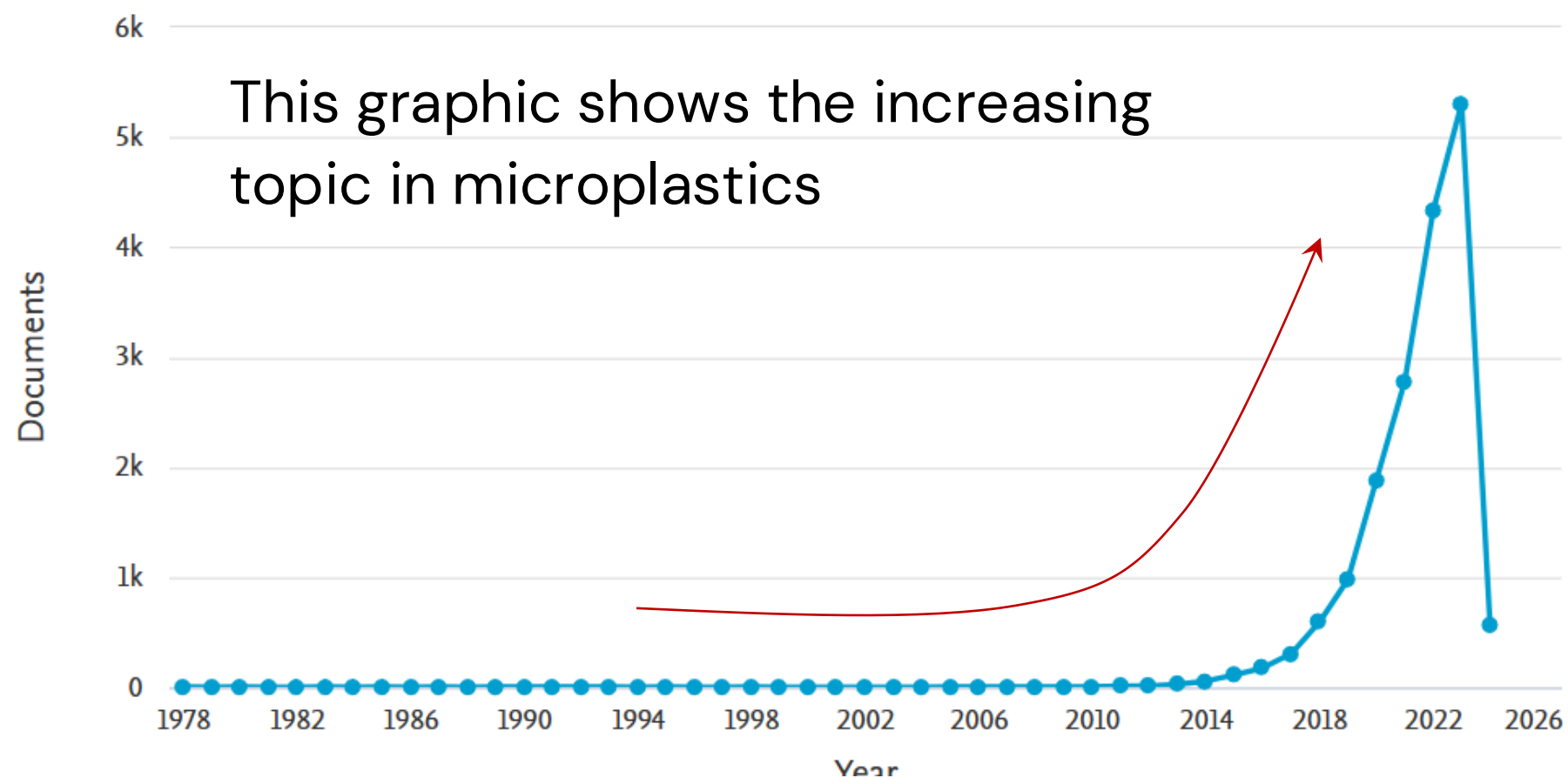
Citation potential

Year ↓

Documents ↑

2024	572
2023	5305
2022	4334
2021	2782
2020	1884
2019	981
2018	593
2017	304

Documents by year



How to determine the topic for papers



Scopus

Search

Sources

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Analyze search results

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763 document results

Select year range to analyze: 1974

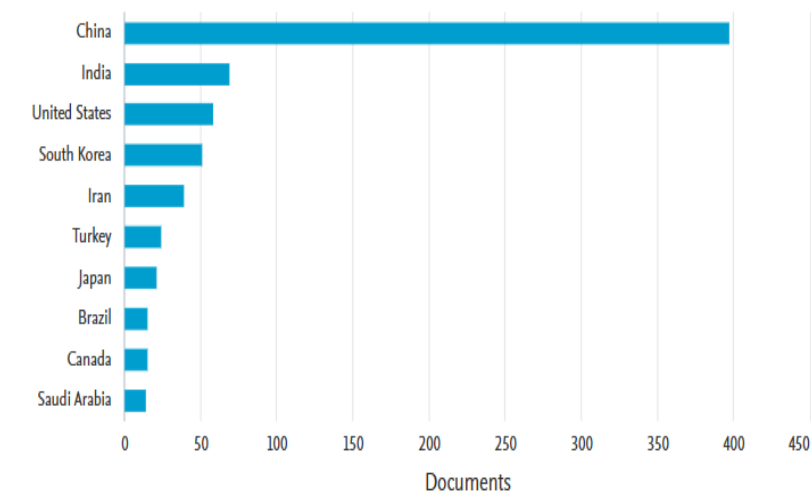
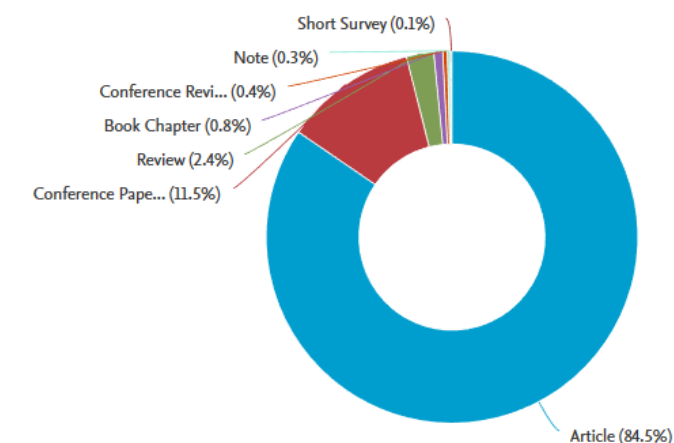
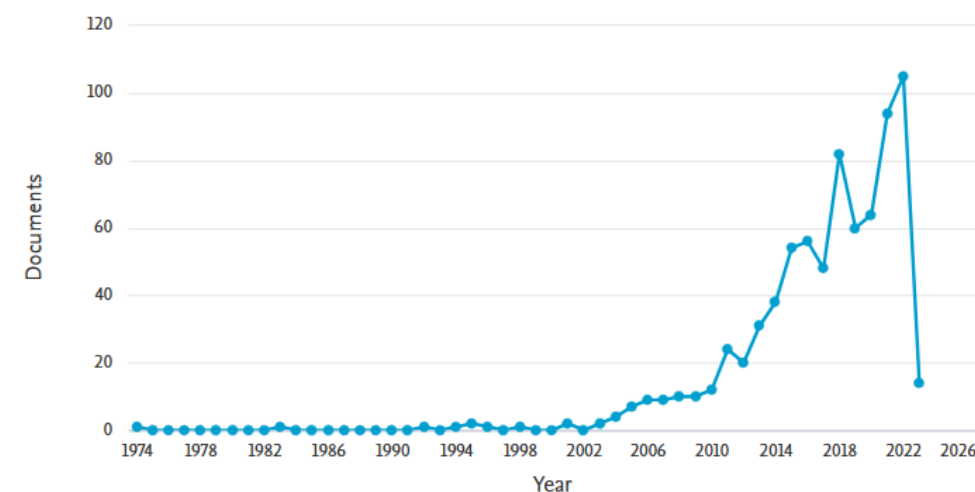
to

2023

Analyze

Year ↓	Documents ↑
2023	14
2022	105
2021	94
2020	64
2019	60
2018	82
2017	48
2016	56
2015	54
2014	38

Documents by year

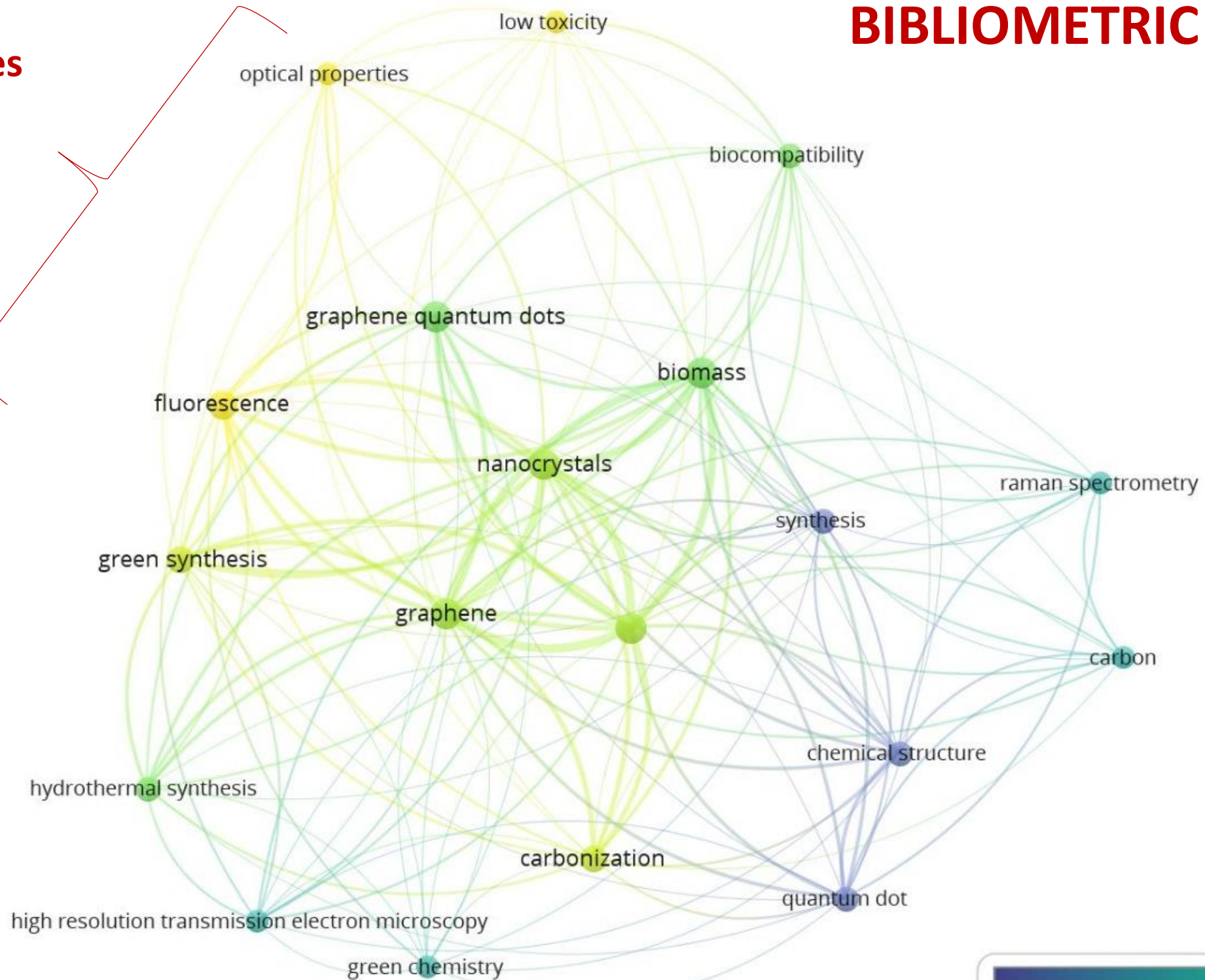


Scopus → Source → Analyze search results

BIBLIOMETRIC ANALYSIS

Physical properties

Group: synthesis methods





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Editor's point of view

Suitability of the **scope** of the journal and figure quality

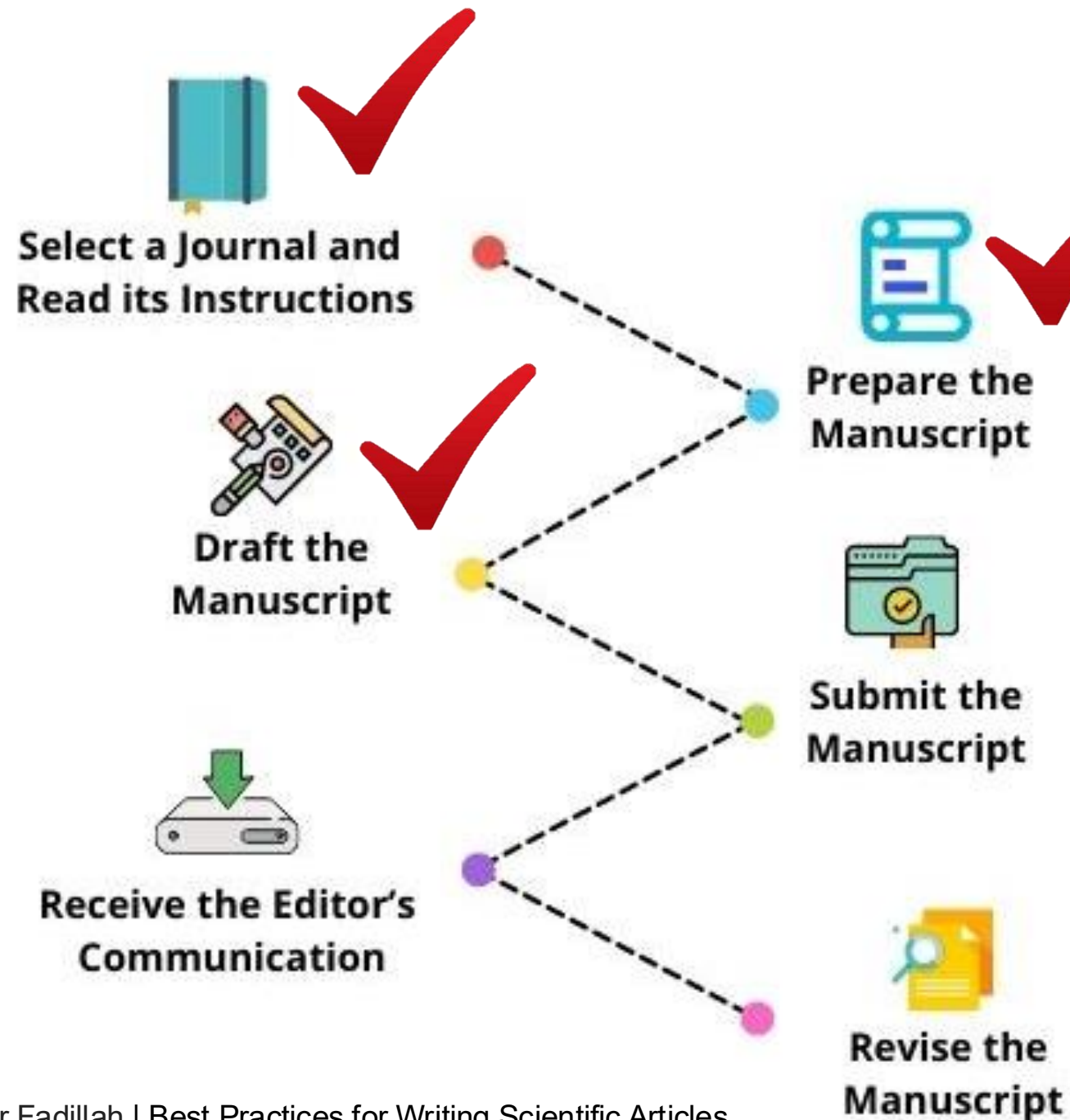


Dear Dr Fadillah,

I read your manuscript with interest but unfortunately concluded that it falls outside the scope of Reactive and Functional Polymers and, therefore I must return it. The main focus of our journal is on the synthesis, characterisation of reactive and/or functional polymers and their application, whereas your manuscript describes the preparation of molecular imprinted GO decorated magnetite. I am sure that your manuscript is much better suited for either a separation journal or a journal dealing with imprinted materials in general. My decision is not a reflection on the quality of the science but merely due to the fact that the number of submissions increased rapidly in the past few years, which made it unfortunately necessary to return a sizeable fractions of manuscripts, prior to sending them out for review.

I am sorry if this is disappointing news and hope you are successful in finding an alternative publication forum for your work. For alternative journals that may be more suitable for your manuscript, please refer to the Journal Finder (<http://journalfinder.elsevier.com>).

Author's point of view



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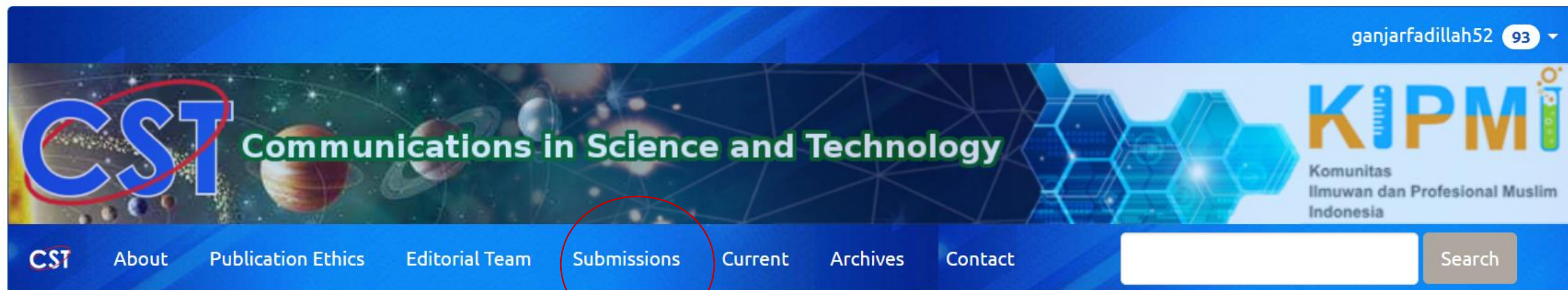
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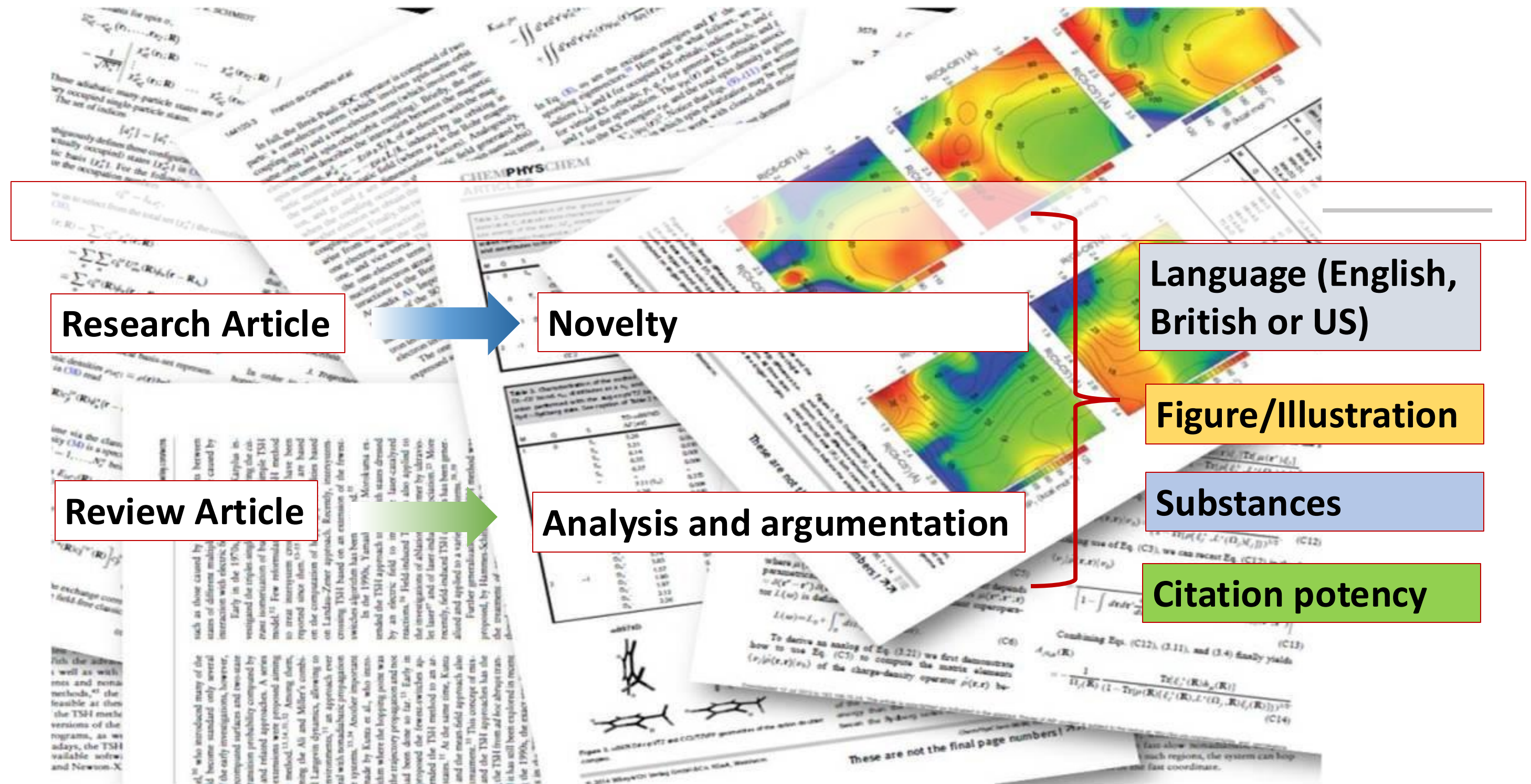
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Frequency: Biannually

Submission Preparation Checklist [Edit](#)

As part of the submission process, authors are required to check off their submission's compliance with all of the following items, and submissions may be returned to authors that do not adhere to these guidelines.



Manuscript Title

Attract reader's attention

Contain fewest possible word

Informative and describe the content

Don't use technical jargon and rarely abbreviation

Keywords

- Are the labels of the manuscript
- Are used by indexing and abstracting services
- Should specific

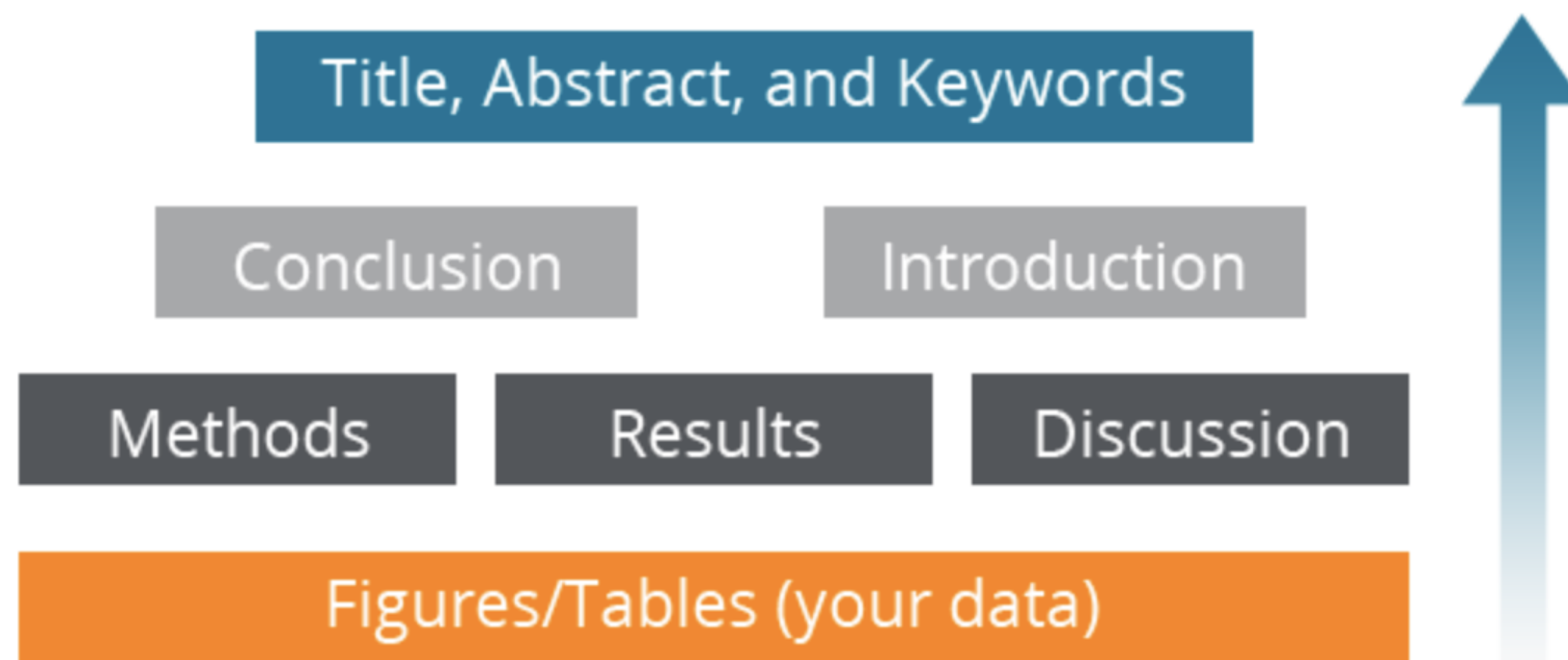
Electrochemical measurement of morphine using a sensor fabricated from the CuS/g-C₃N₅/Ag nanocomposite

Keywords Morphine, CuS, g-C₃N₅, AgNPs, Electrochemical measurement

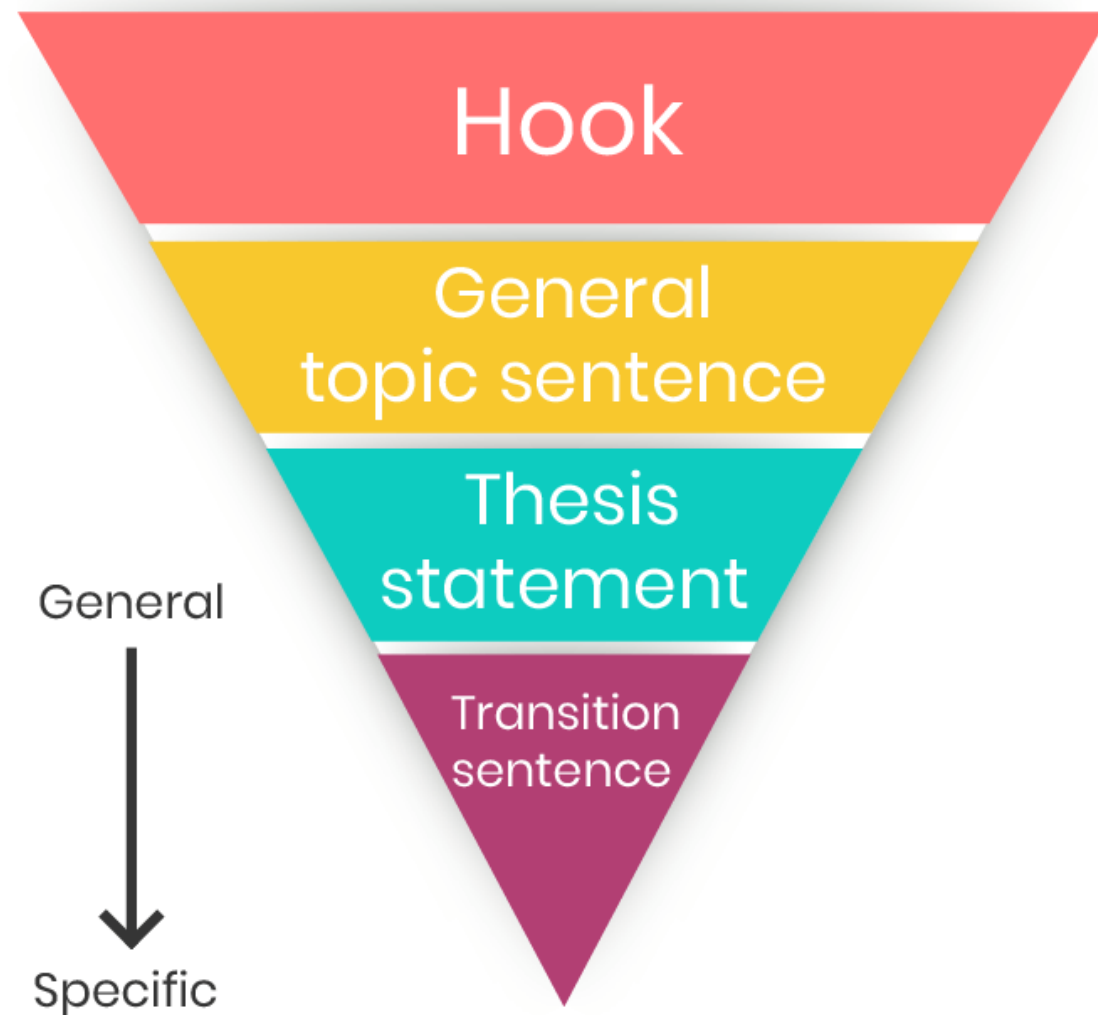
Abstract

- Summarize the problem, methods, results dan conclusion
- Make it interesting and understandable
- Make it accurate and specific
- Keep it as brief as possible

The process of writing – building the article



Introduction: state art of research



Critical thinking and problem solving

Novelty dan research gap

Research purposes

Interpreting and Discussing Research Findings

Comprehensive Analysis

Thoroughly examine the data to identify patterns, trends, and meaningful insights that address the research questions.

Contextual Interpretation

Interpret the findings within the broader context of existing literature and knowledge in the field.

Thoughtful Discussion

Discuss the implications, limitations, and potential real-world applications of the research in a clear and objective manner.

Suggestions for Future Research

Propose new research questions, hypotheses, or directions that build upon the current findings and advance the field.

A visual representation of the main **findings** or **concepts** of a research paper

1

Simplicity

2

Clarity

3

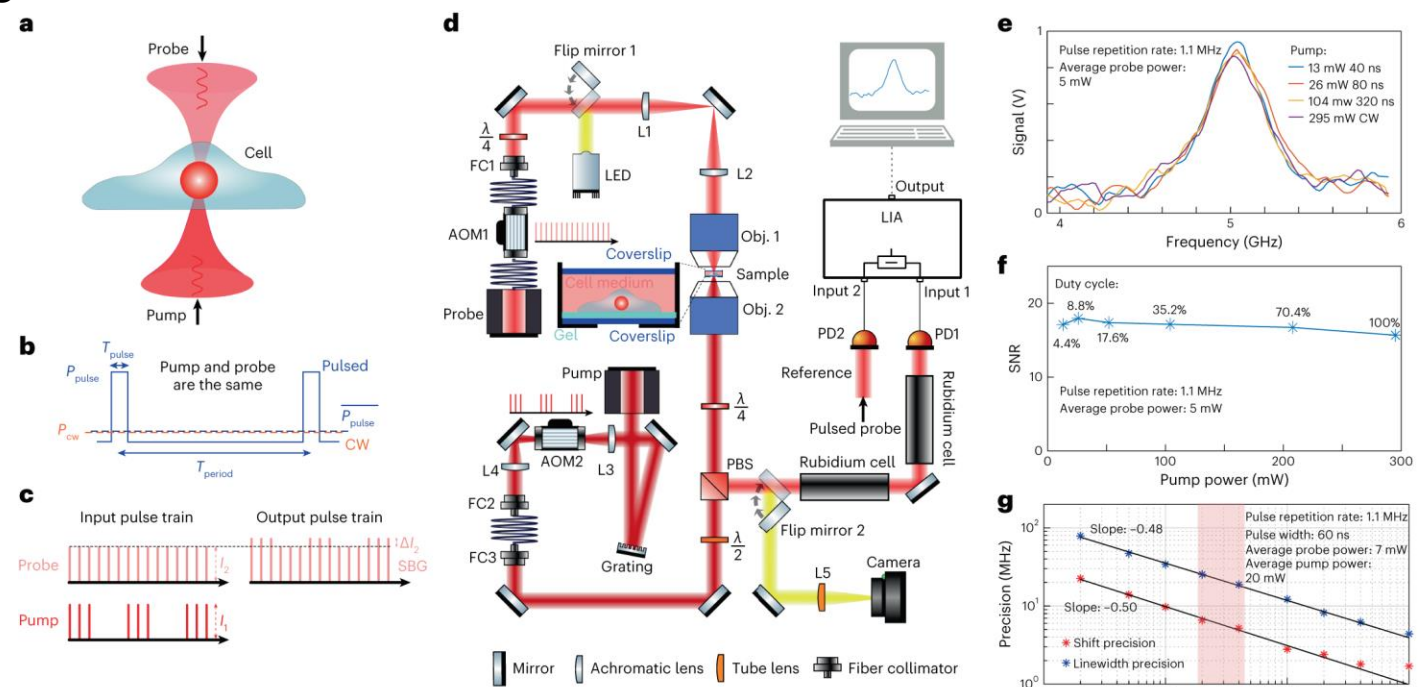
Visually appealing manner

Ensuring Data Visualization is Effective

Effective data visualization is crucial for communicating research findings clearly and impactfully. Carefully select charts, graphs, and illustrations that accurately represent the data and highlight key insights.

Consider the target audience and choose visualization styles that are easy to interpret. Ensure the design is uncluttered, the scale and labels are clear, and the color palette is accessible.

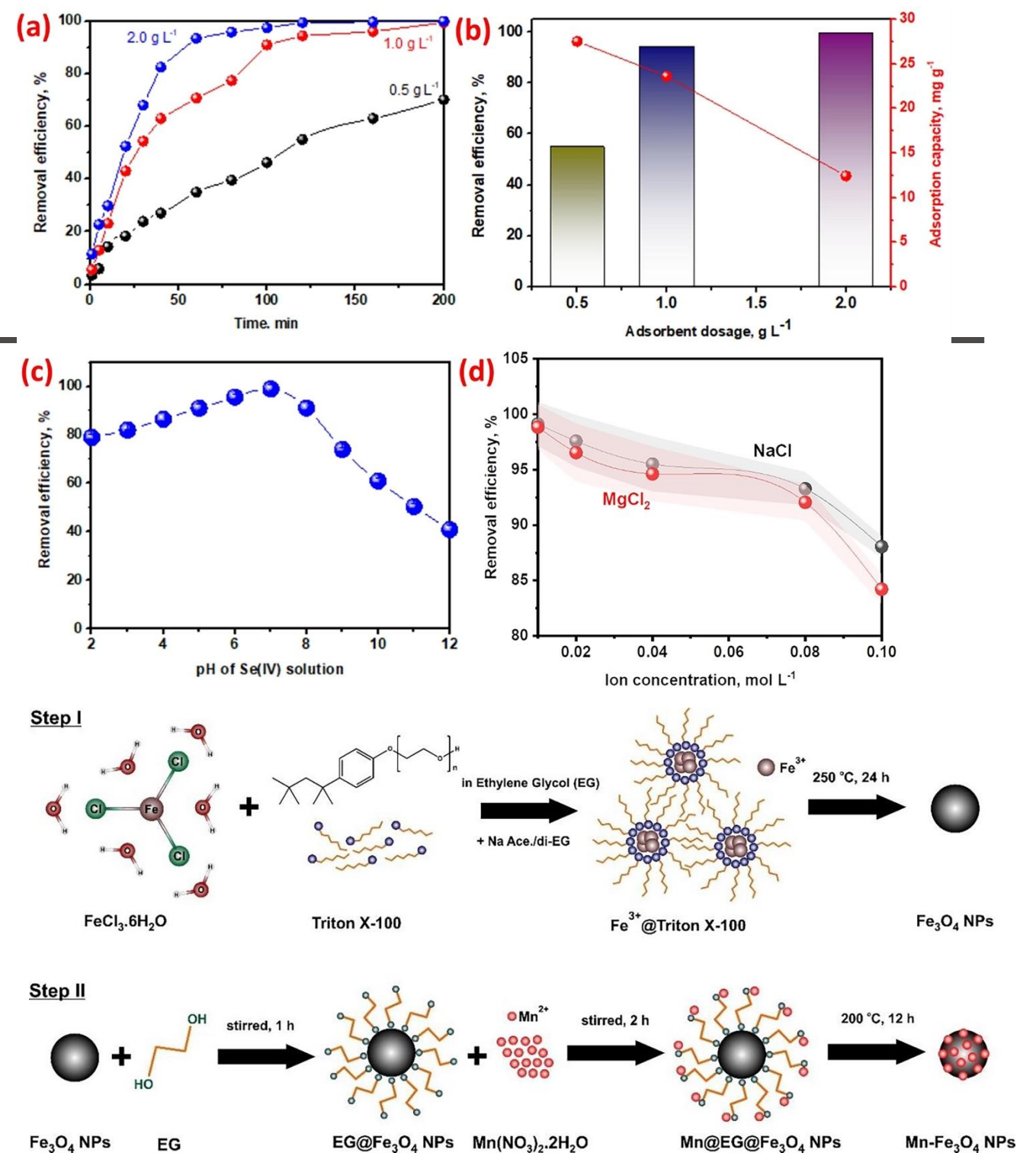




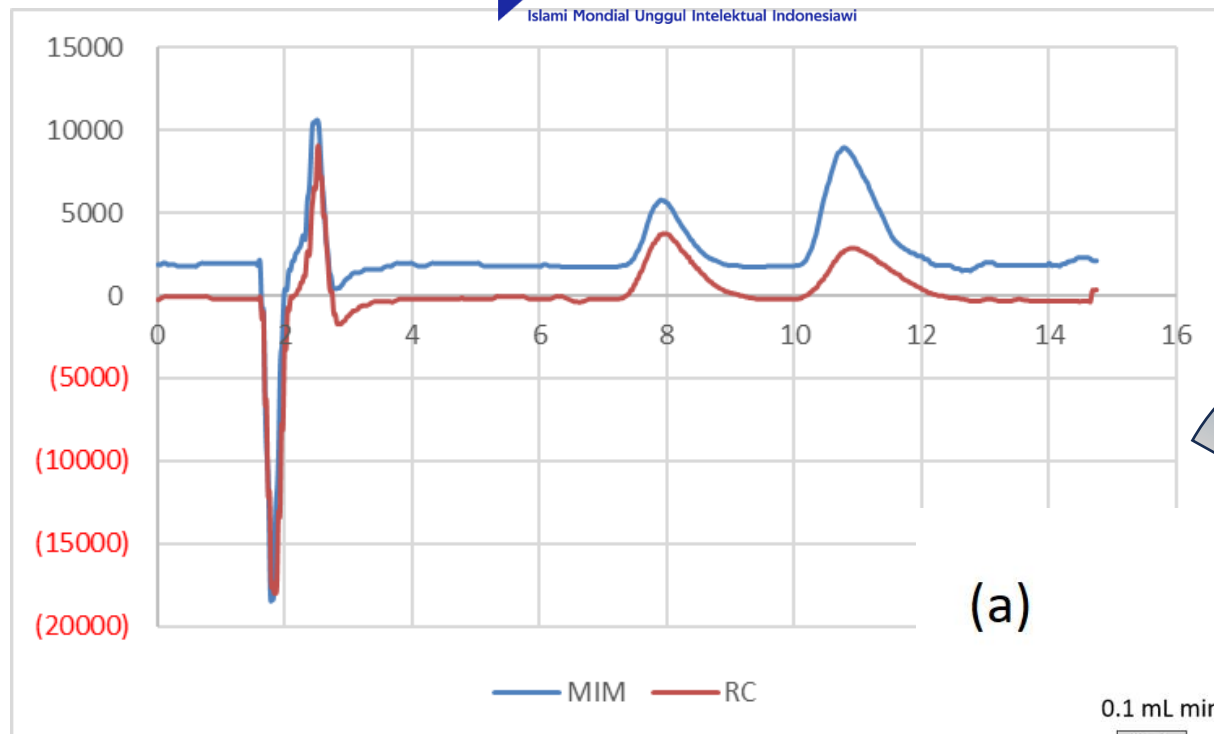
Yang, F., Bevilacqua, C., Hambura, S. *et al.* *Nat Methods* (2023).

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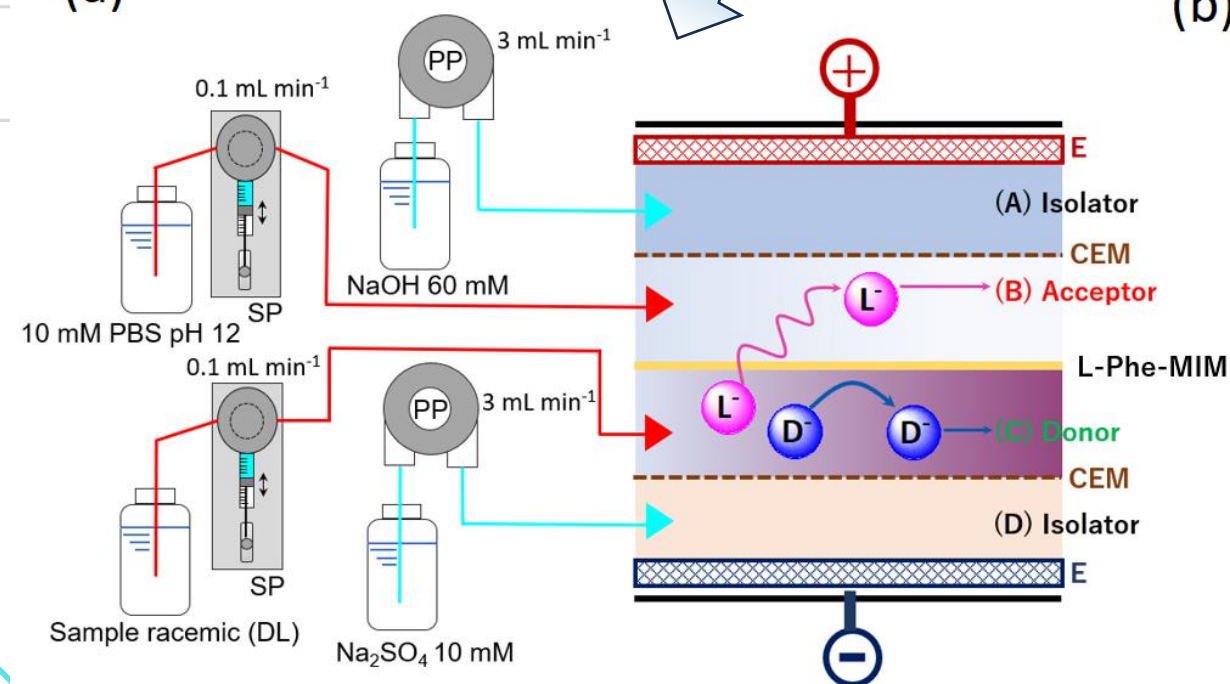
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3. Using a supporting software: Chemdraw, Corel, Adobe photoshop, PPT, originLab



Fadillah et al., 2023, Environmental Nanotechnology, Monitoring & Management, 20, 100796

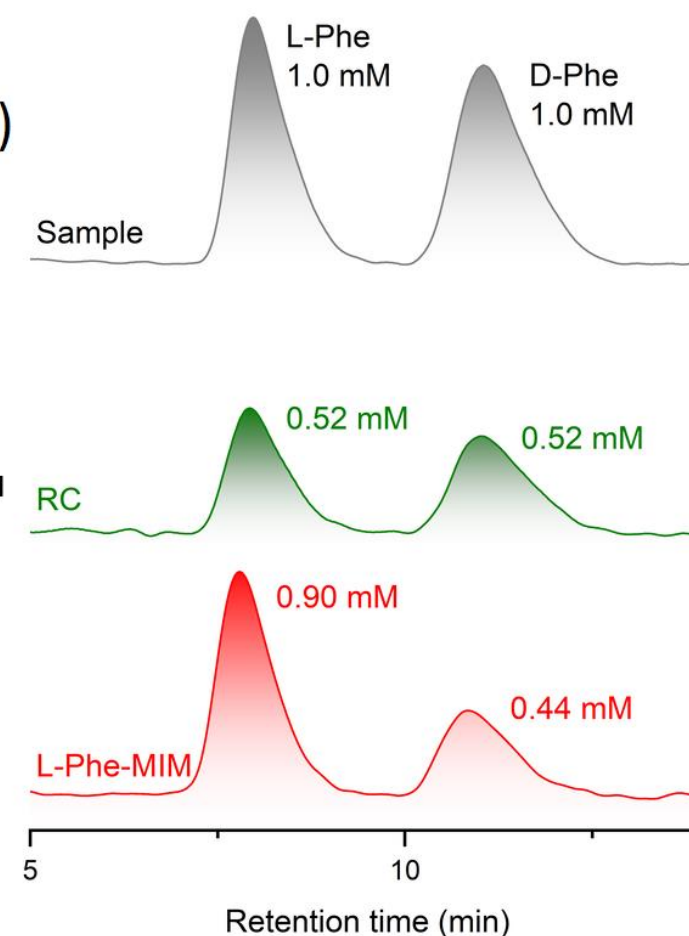


(a)



Enhancing Data Quality
Enabling Complex Analyses
Supporting Decision Making

(b)





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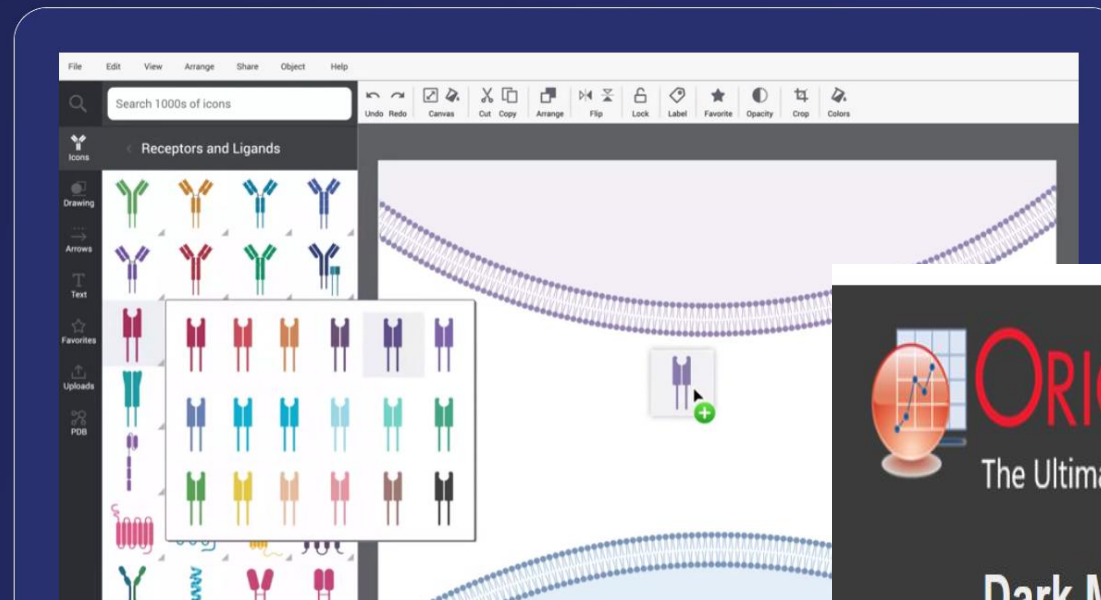
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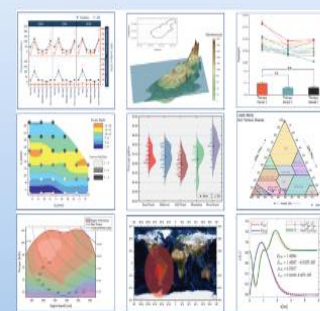
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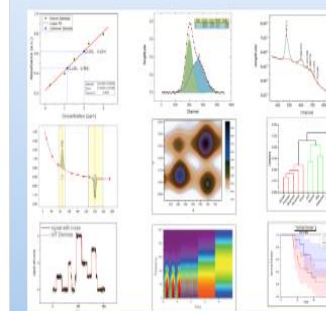
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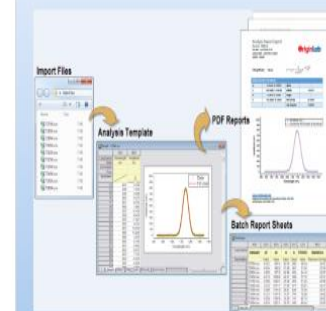
Graphing



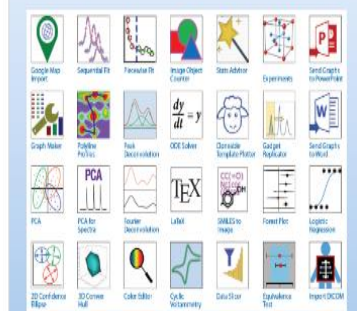
Data Analysis & Statistics



Batch Operations

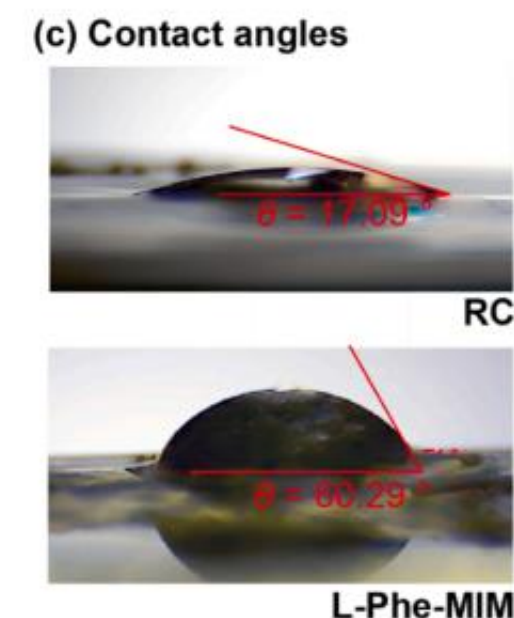
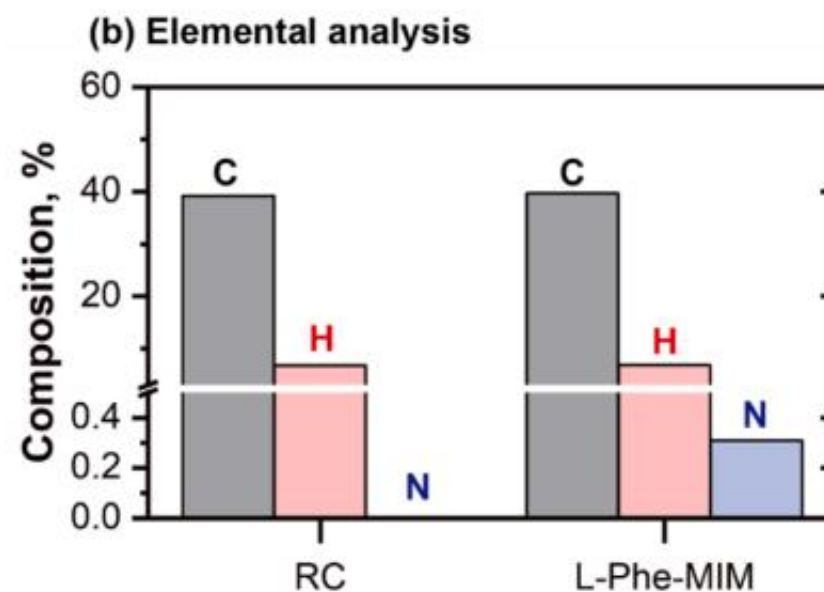
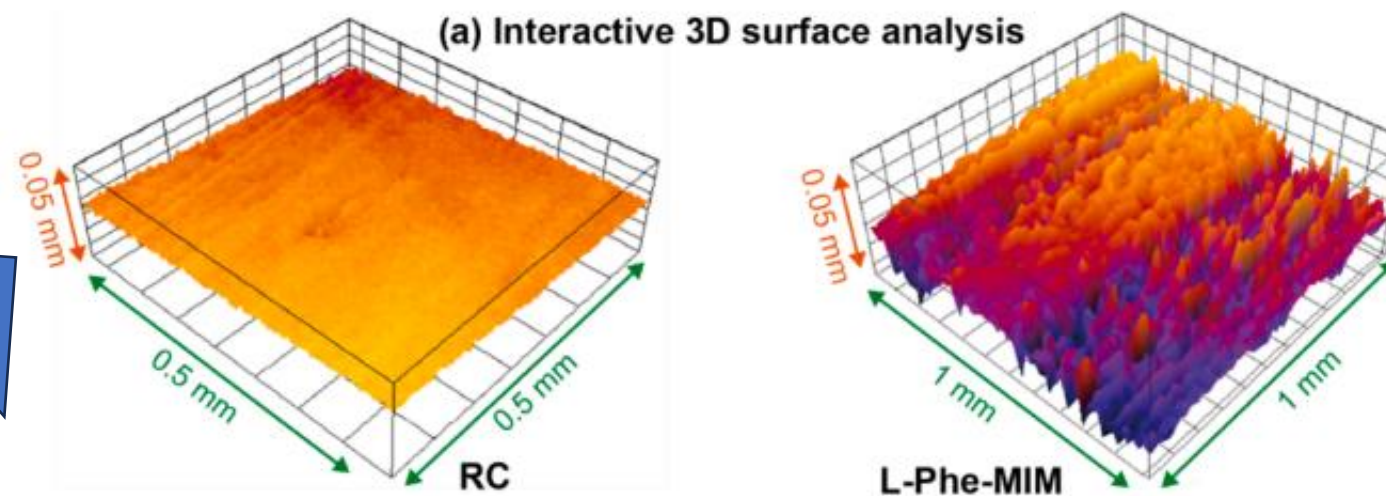
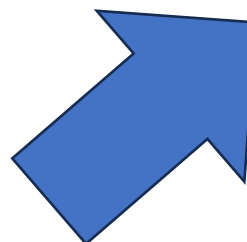
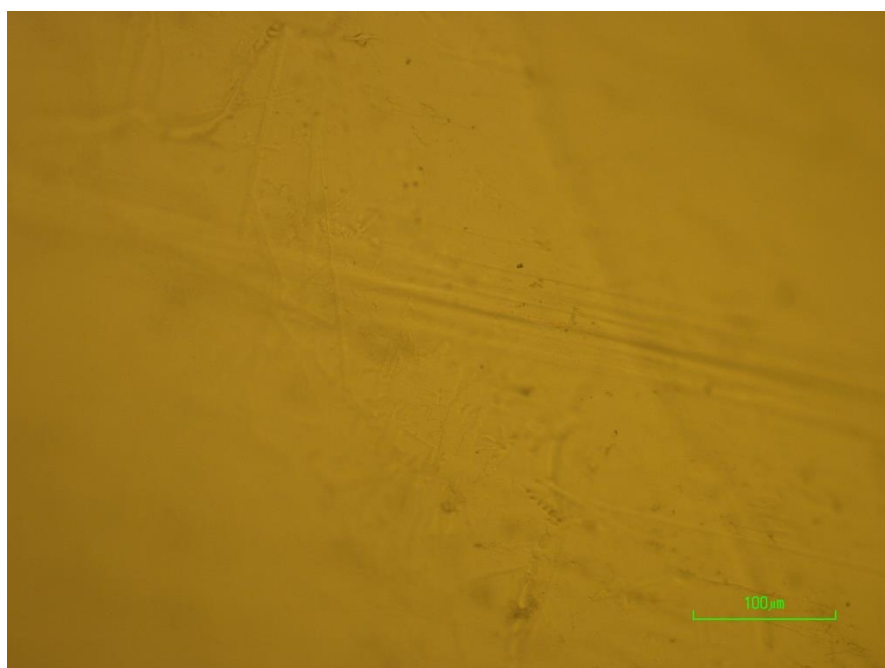


Apps



Results and Discussion

The author must be able to convey the results in an informative and interesting way, meaning the ability to process data into important points.



Disadvantages: Many authors in drafting manuscripts always display “plain” data without any processing.

Results and Discussion

- This section provides an explanation for the research results obtained.
- It can begin with a sentence that outlines the conducted research, followed by a development of information that includes supporting data. Additionally, it should highlight the significance of the research findings.
- The author's discussion and argumentation must be backed by theoretical studies or references to other research results.

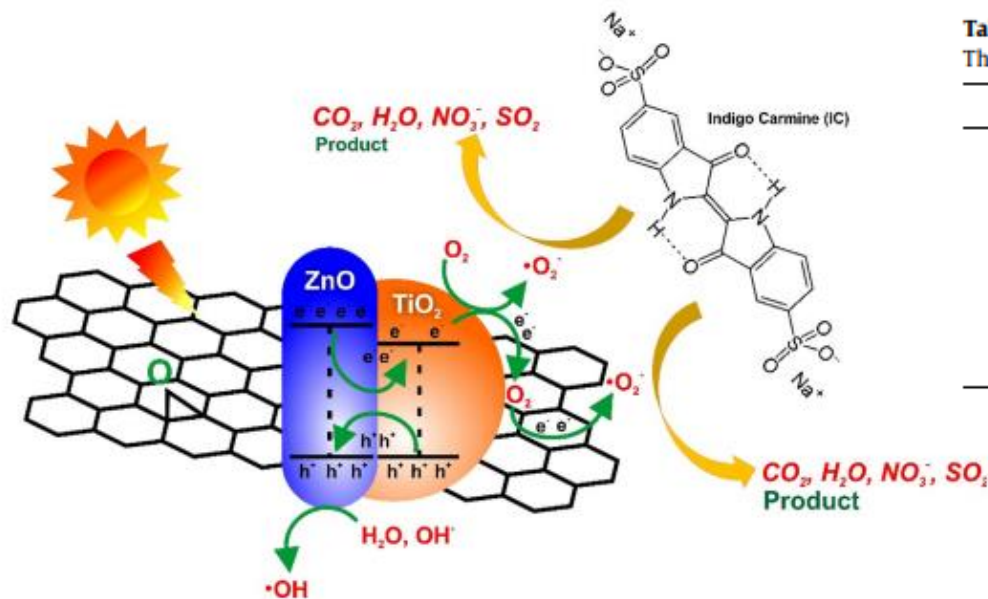


Table 2

The summarized several types of photocatalyst material for degradation of IC dye.

Materials	Irradiation source	Irradiation time (min)	Degradation efficiency (%)	Ref.
Cobalt-doped ZnO ₂	Xe lamp 150 W	180	~90	[38]
SiC-TiO ₂	UV lamp 20 W	180	100	[39]
1% Pd-ZnS/rGO	Xe lamp 150 W	210	100	[40]
Fe-doped TiO ₂ 0.25	Fluorescent bulb 100 W	60	73.5	[29]
α -Bi ₂ O ₃ /C nanocomposites	UV lamp 15 W	240	84.5	[41]
AgIO ₄ /ZnO nanoparticles	Hg lamp high pressure	120	98	[42]
TiO ₂ nanotubes	Hg-vapour lamp 125 W	120	~95	[43]
Hydrophobic TiO ₂ -ZnO/rGO	Xe lamp 500 W	80	95	This work

Purpose of Graphical Abstract

1

A graphical abstract can improve visibility of your research

2

A graphical abstract lets people know what to expect in your article

3

Graphical abstracts allow more people to know about your research

Making it easier for readers to quickly grasp the main points of the research

How to prepare Graphical Abstract?

Your manuscript

Graphical Abstract

1

IDENTIFY THE KEY MESSAGE

2

**DEFINE THE
TARGET AUDIENCE**

4

**ADD COLORS AND
OTHER DESIGN
ELEMENTS**

3

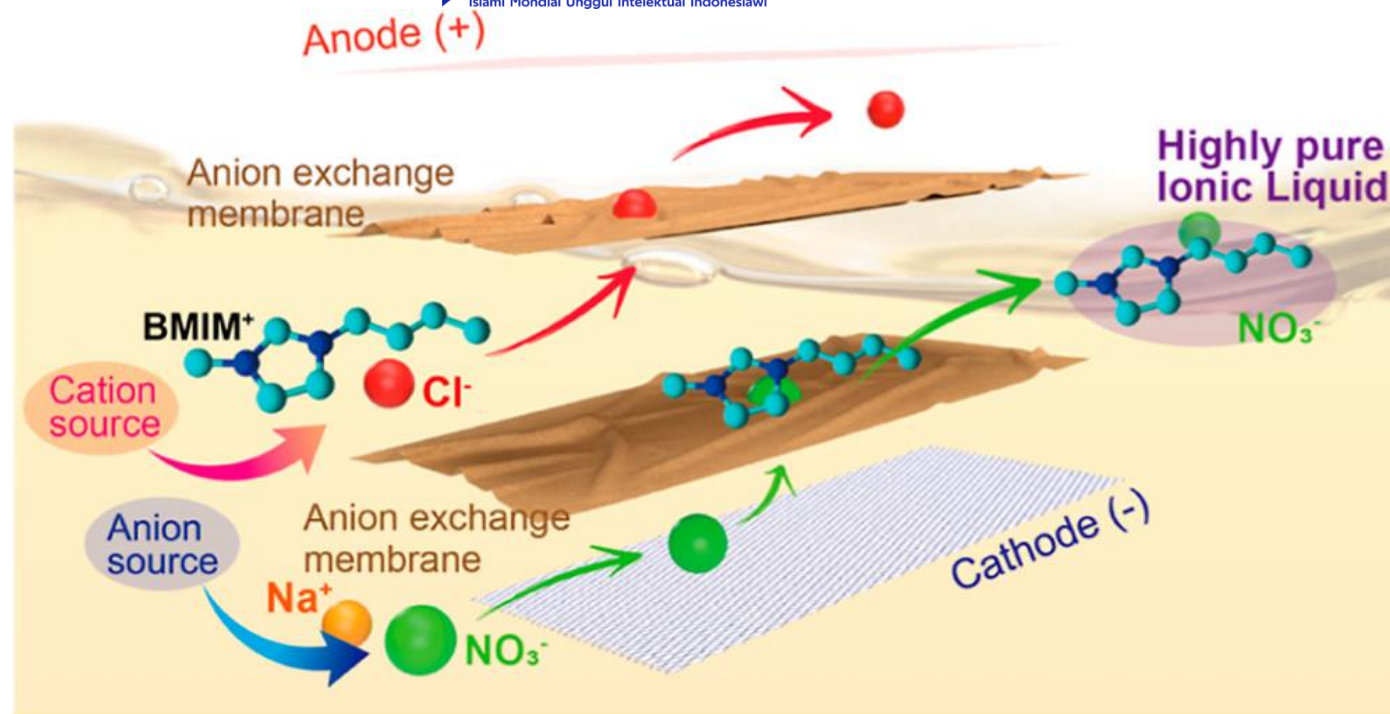
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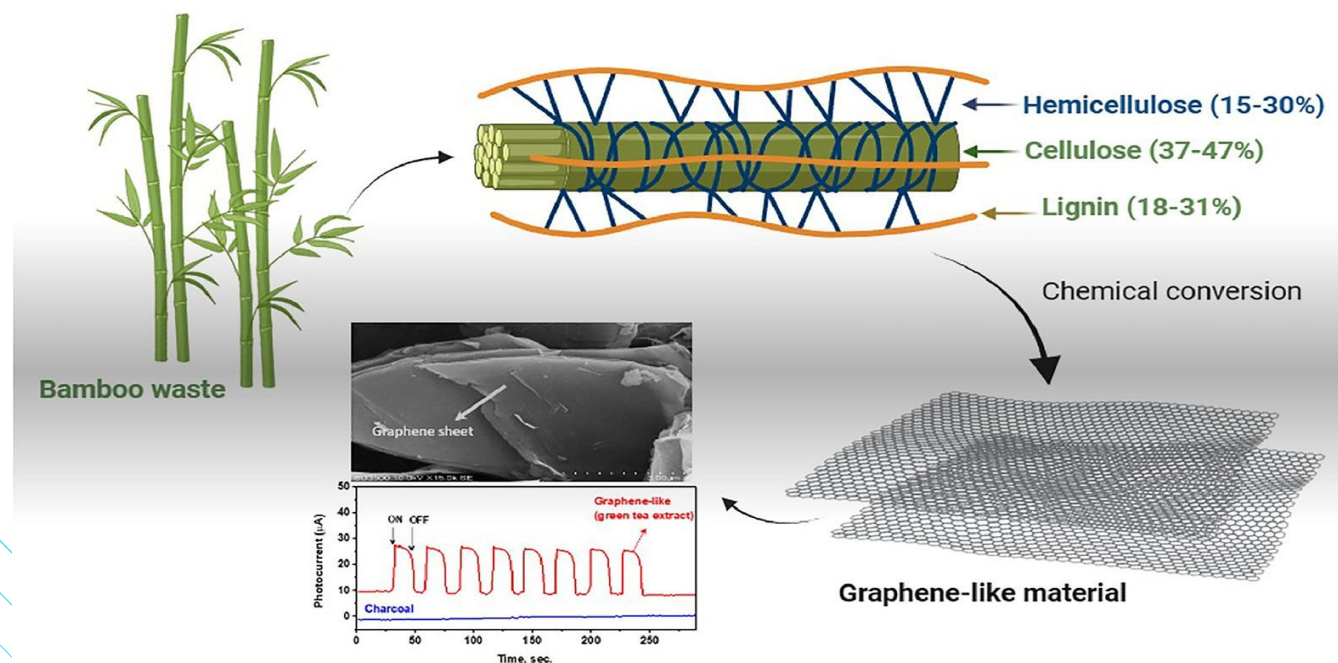
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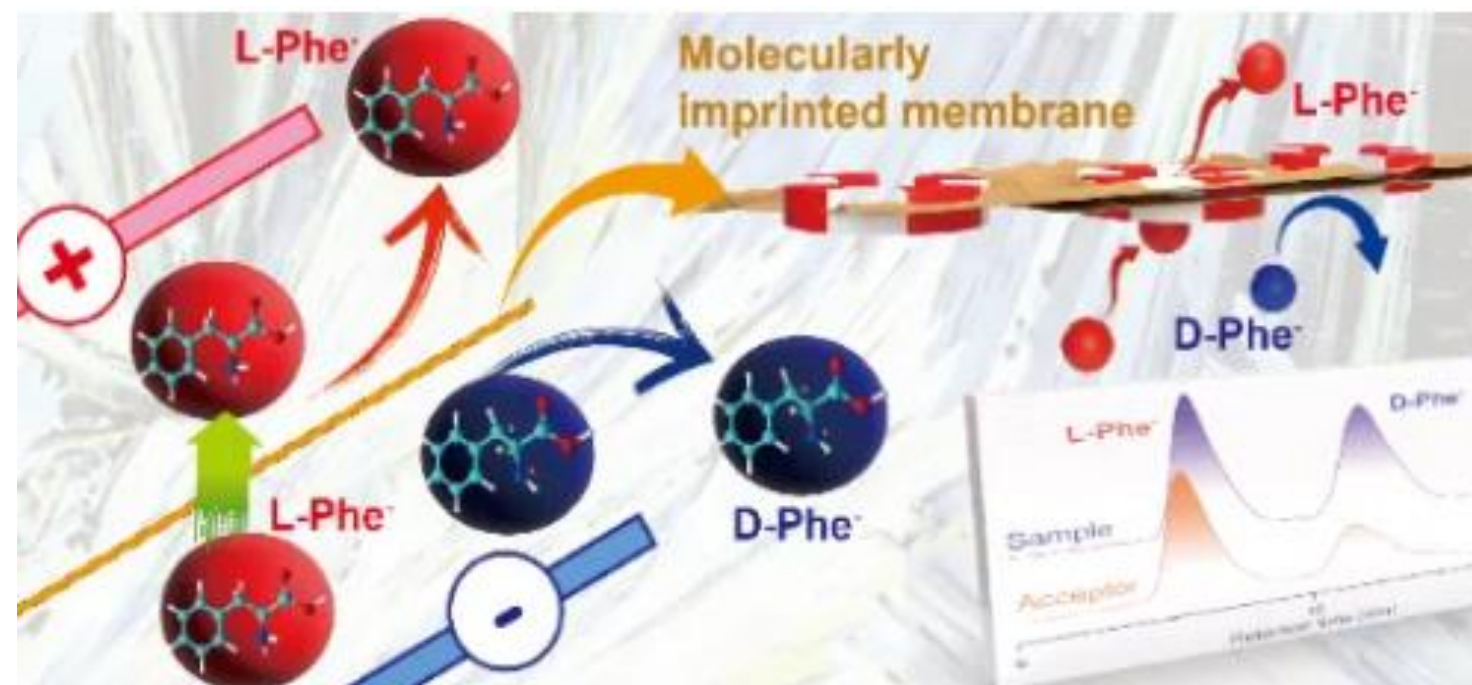
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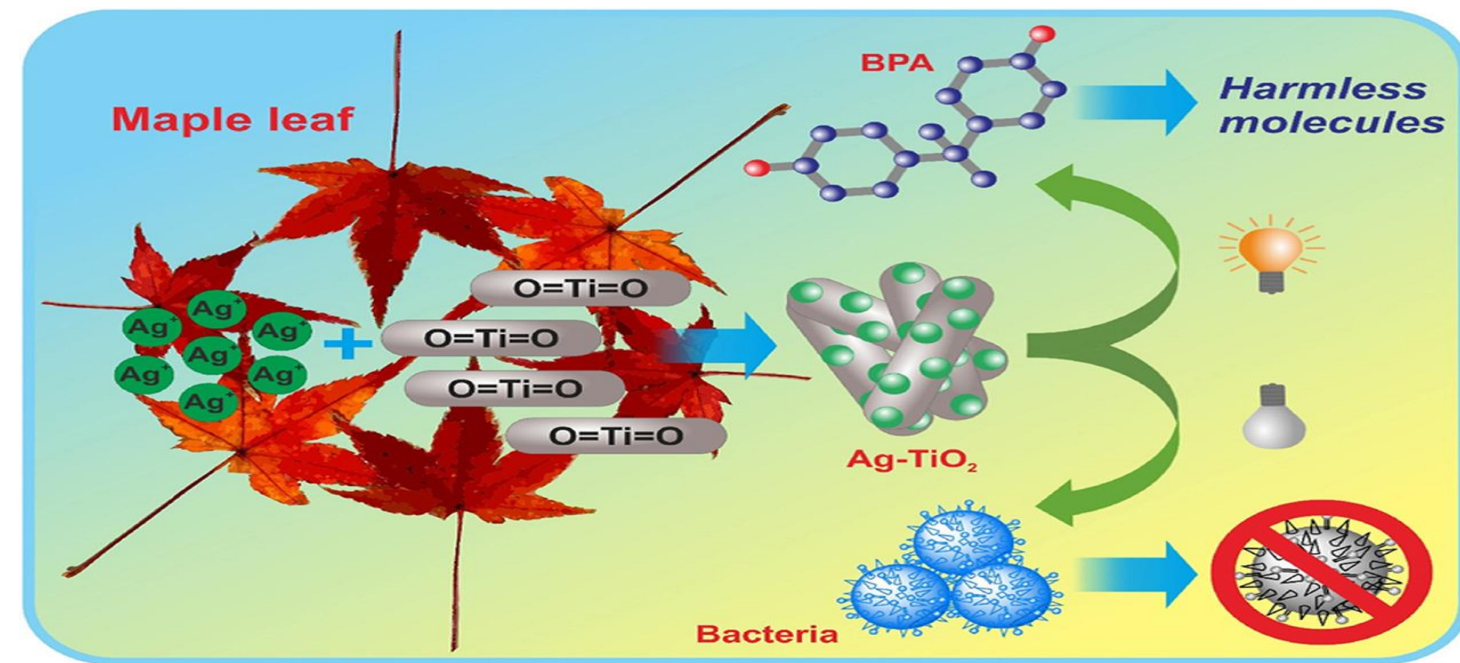
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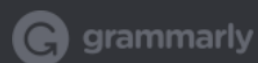
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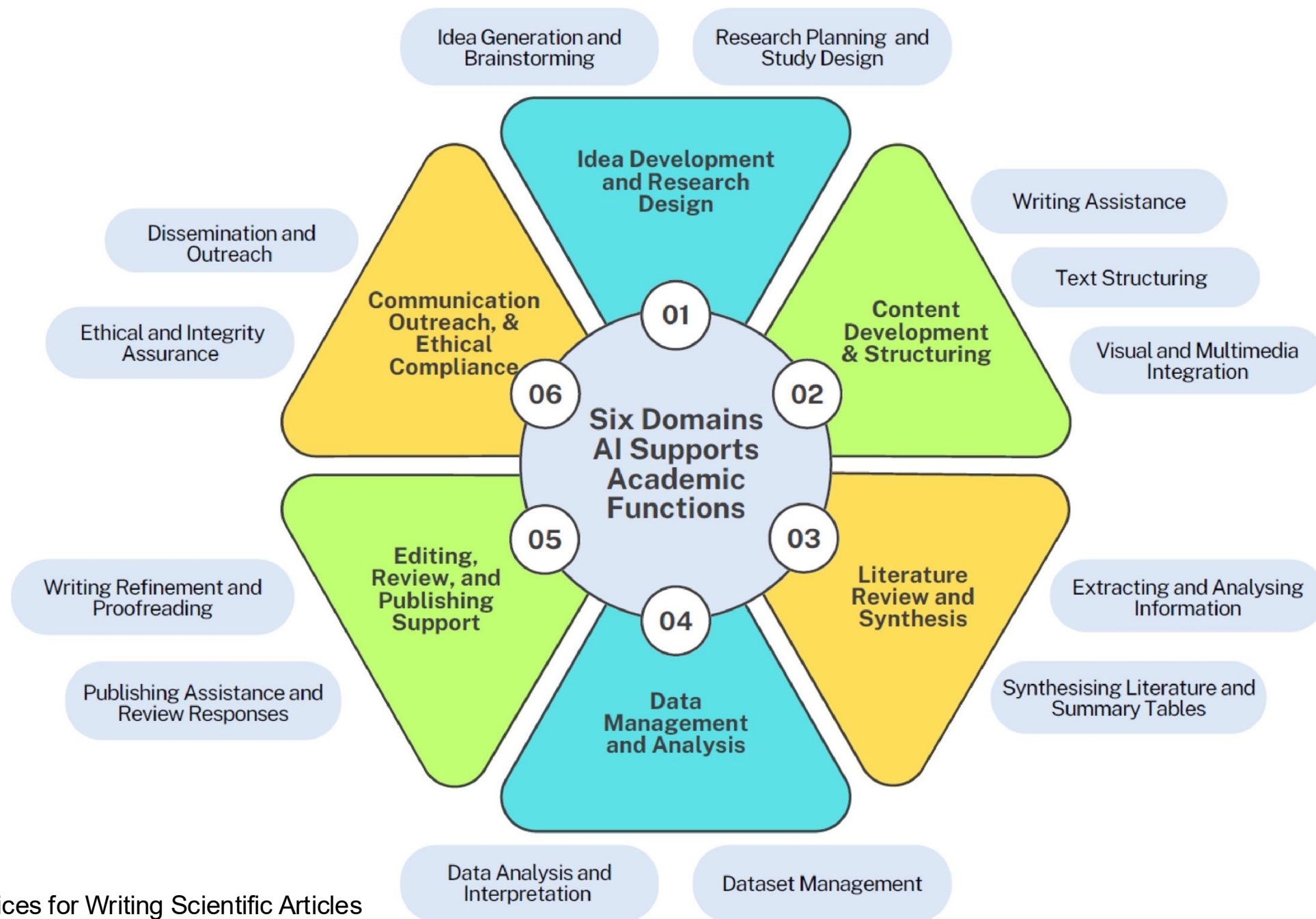
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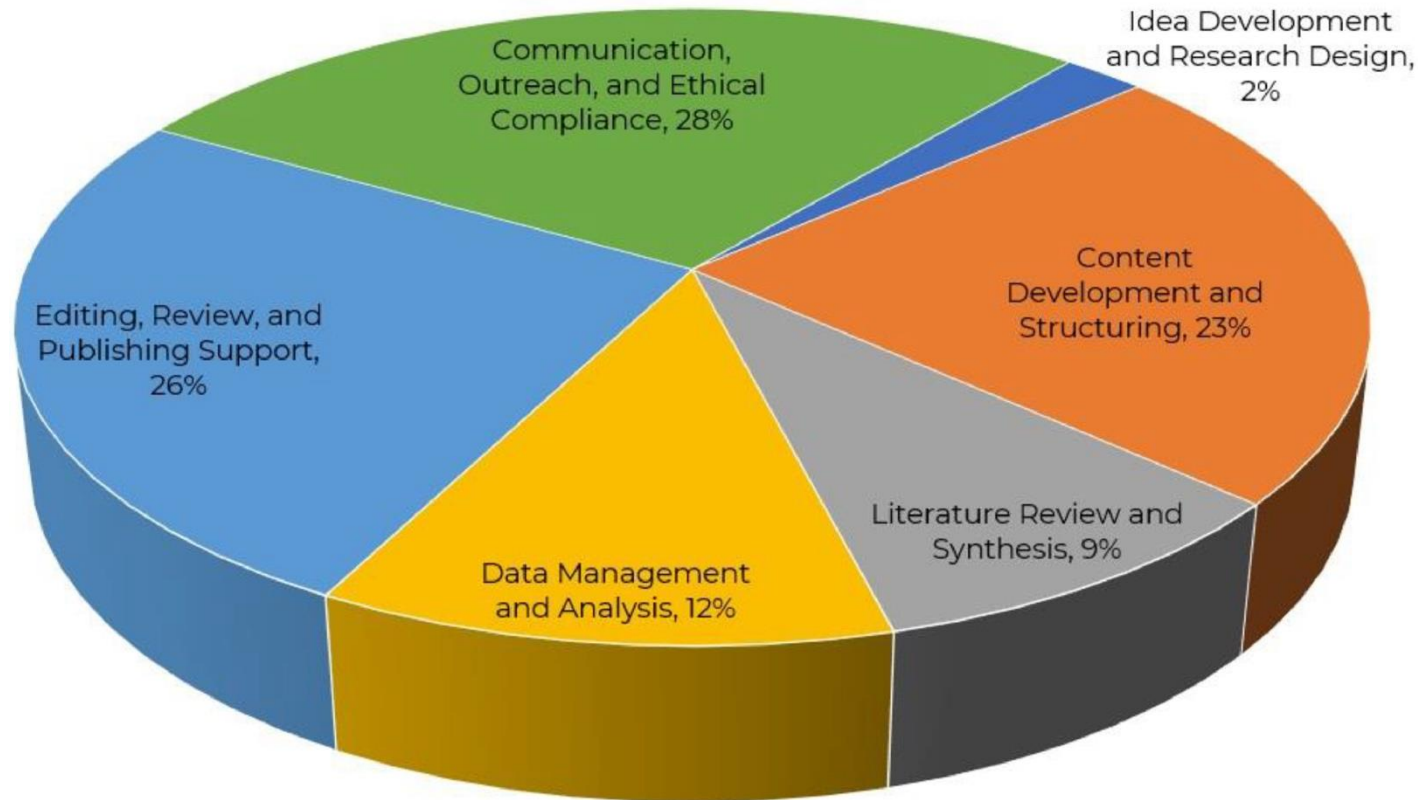
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AI for Scientific Writing





Prompt

Gives hypotheses and idea exploration about using chitosan in wound healing.

Response

Hypotheses:

1. Chitosan can promote wound healing by enhancing the proliferation and migration of skin cells, such as fibroblasts and keratinocytes, due to its ability to stimulate the production of growth factors and extracellular matrix proteins.
2. Chitosan can improve the antimicrobial properties of wound dressings by inhibiting the growth of bacteria and fungi, which can reduce the risk of infection and promote wound healing.
3. Chitosan can reduce inflammation and oxidative stress in the wound bed, which can accelerate the healing process and improve the quality of the healed tissue.

Idea exploration:

1. Investigating the effect of chitosan in combination with other natural compounds, such as honey or aloe vera, on wound healing.
2. Exploring the potential of chitosan-based hydrogels or films for wound dressings, which can provide sustained release of chitosan and other active compounds.
3. Investigating the effect of chitosan on the differentiation of stem cells into skin cells, which can promote tissue regeneration and improve wound healing.
4. Exploring the potential of chitosan nanoparticles for targeted delivery of growth factors or other therapeutic agents to the wound bed.
5. Investigating the effect of chitosan on the immune response in the wound bed, which can influence the healing process and tissue regeneration.
6. Exploring the potential of chitosan-based scaffolds for tissue engineering applications, such as skin or cartilage regeneration.



Article Type
Selection



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General
Information



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2. Generative AI images

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3. Beberapa jenis AI yang bisa **membantu/assist** dalam penulisan artikel ilmiah:



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quality scientific
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Grammarly
checker,
paraphrase

4. Kualitas dari jawaban AI khususnya seperti ChatGPT sangat bergantung pada **kualitas prompt** yang diberikan.

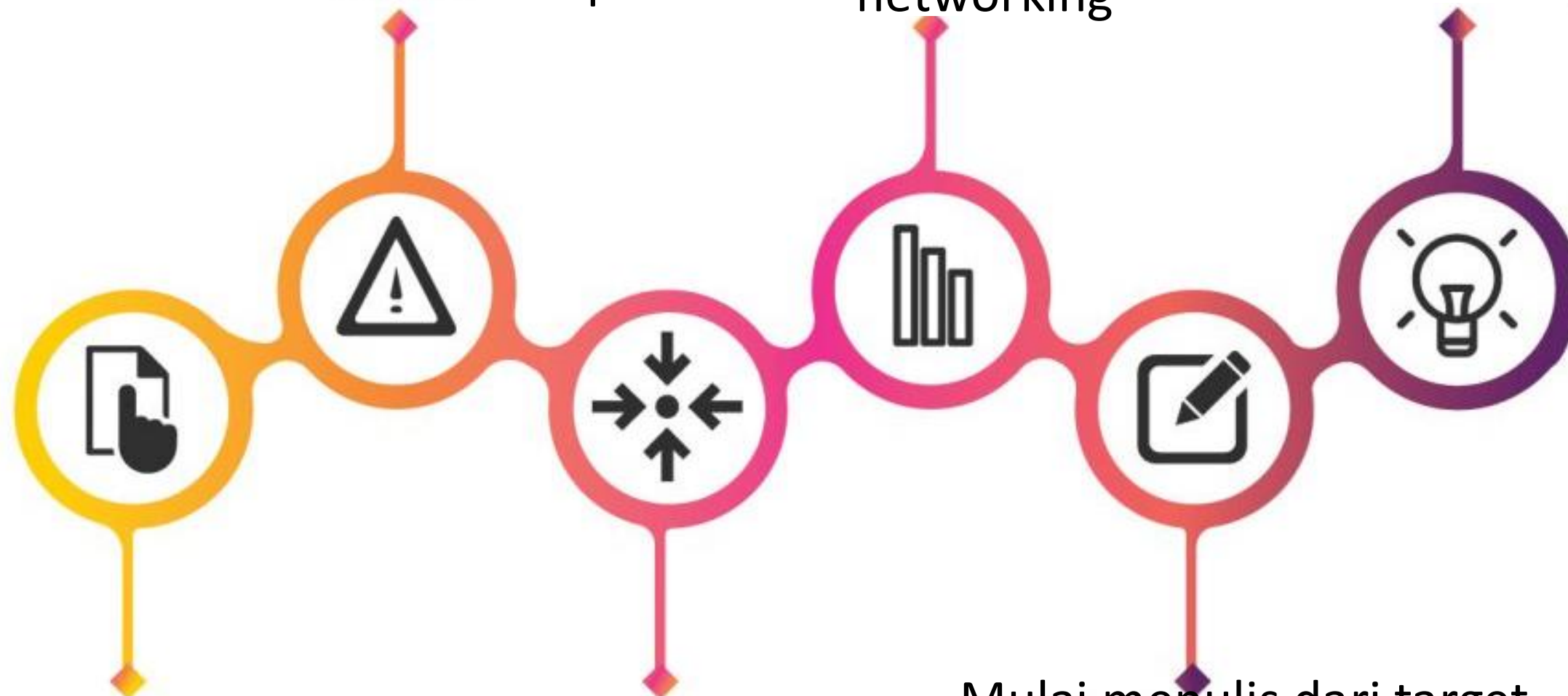
"Cek tulisan saya di atas. Cek grammar, kejelasan, dan typo. Berikan feedback untuk tulisan tersebut"

Tips dan Trik

Biasankan selalu menulis
rutin walau 1 kalimat perhari

Menjaring
networking

Jangan pernah
berhenti menulis



Tingkatkan Membaca

Menjadi tim editor
atau reviewer jurnal

Mulai menulis dari target
level ranking rendah ke
tinggi



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*“Publikasi = proses, bukan instan
Jangan takut ditolak – terus belajar dan mencoba”*



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Thank you..

Ganjar Fadillah, Ph.D.

Universitas Islam Indonesia

1. Pak Fuad, tips dalam mencari ide
2. Bu Selly, proses publikasi. menulis dulu atau mencari jurnal dulu
3. Isna, kerangka penulisan dari Gambar bidang Informatika

1. Keywords: kenapa specifics
2. Ilustrasi gambar
3. Penulis dari Indonesia