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FOR INNOVATION THROUGH ENGINEERING SCIENCE

**V4 Seminars for Young Scientists on Publishing Techniques
in the Field of Engineering Science**

Where to present your results
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Types of publications



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Main categories:

- **Conferences:**
 - Academic conferences
 - Youth conferences and seminars
- **Journals:**
 - Peer reviewed journals
 - Journals with Impact Factor (IF)
- Technical reports
- Thesis works and dissertations
- Books
- Magazines
- Websites



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Scientific conferences



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A **scientific conference** is a **meeting** of scientists, intended to bring them together to **learn about recent developments**, present **new data** to each other and **discuss it critically**, and to **socialize** and get to know new colleagues

Levels of conferences:


- **Academic conferences:** *for researchers* (not necessarily academics) to present and discuss their work (like ECTC - Electronic Components and Technology Conference)
- **Youth conferences and seminars:** *for young scientists* to practice the presentation of scientific results (like ISSE - International Spring Seminar on Electronics Technology)



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Scientific conferences



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Academic conferences categories:

- **Themed conference:** organized around a particular topic;
- **General conference:** wider focus, with sessions on a wide variety of topics
- **Professional conference:** not limited to academics but with academically related issues

Audience: regional, national, or *international*

Conference publication:

- Oral presentations (time span 10 to 30 mins) with a discussion
- Keynote presentations (30 – 60 mins) for distinguished presenters
- Poster presentations (A1–A0 size printed poster) with discussion
- Short oral presentation (3-5 mins) introduce the poster without discussion
- Academic papers published in the conference proceedings (not necessary) or in a special issue of a journal

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Scientific conferences



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Conferences sessions:

- **Oral session:** 1-2 keynote and 4-5 regular presentations (1.5 – 2 hours)
- **Poster session:** 15-25 parallel poster presentations in an exhibition room (1.5 – 2 hours)
- **Industrial sessions and exhibitions:** opportunity for the related industry to present them self and products



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Scientific conferences



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Conferences sessions:

- Panel and round tables discussions: about hot topics and key issues with leader representatives of the field
- Workshops: practicing opportunities in different topics (like presentation techniques, application of software) for the attendants




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Scientific conferences



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Properties of conferences:

- usually yearly meetings of scientific societies,
- last between two days and a week (conference has parallel sessions while seminar has only serial sessions)
- organized by a scientific society or by a group of researchers
- announced by a Call For Papers or a Call For Abstracts (describes the broad theme and formalities)

Conference abstracts:


- Short abstract: a short summary of the work (250-500 words) and max. one figure (usually applied on academic conferences)
- Extended abstract: 2 pages length abstract with longer description of the work with figures (usually applied on youth conferences)

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Scientific conferences



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Reviewing processes on conferences:

1st step (review of the abstract)

- On academic conferences the accepted presentations are selected according to the short abstracts, the reject rate can be high
- On youth conferences the extended abstracts are reviewed by 2-4 reviewers, the authors get back hints for the preparation of the final paper, the reject rate usually low

2nd step (review of the conference paper)

- The conference paper is not reviewed if it is published in conference proceedings
- The conference paper is reviewed if it is published in a journal (according to the rules of the journal)



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Scientific conferences

Advantages of the conference:


- **feedback and critical evaluation can be given immediately** about the results
- useful forum to publish „partial/first” result of a series of research to **get hints for the further work**
- **more varied possibilities to present the results** (Power Point presentations, videos, oral explanations, etc.)
- Improve the lecturing, manuscript writing and debate skills
- „business holiday” and winning conference awards

Disadvantages of the conference:

- lower respect of the publication (compared to IF journal papers)
- „losing the results” for further publications (e.g. in IF journals)
- conference and travel costs

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Scientific journals


The „highest level” of academic publishing is a scientific journal. Periodical publication about the progress of science, usually by reporting new research. **Articles are written by active scientists** (PhD students, researchers and professors) instead of professional journalists.

Main properties:

- Most **journals are specialized**, (some of the oldest journals like Nature has wide range of scientific fields)
- Articles **have been peer reviewed**, to ensure the quality, and scientific validity
- **Scientific journal is not a magazine**, issues are not read casually, as one would read a magazine
- Usually, **rigorous rules of scientific writing** are enforced by the editors

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Scientific journals

Importance of publishing in scientific journals:

- „Show your research to the scientific world”
- Journal articles can be used in higher education
- Journal articles help researchers to keep up to date with the progress of their field
- An important part of the journal articles are the citations of earlier work. The impact of articles and journals are measured by counting citations
- Academic and grant rankings are usually based on the **number and „quality”** (see later) of journal articles published by the author
- **In doctoral programs and grants there are rigorous requirements to publish a certain number of journal articles.**

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Scientific journals

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Types of journal papers:

Original research paper:

- usually 5-12 pages and are **complete descriptions of current original research findings** (page and/or figure limitations can be applied)
- an essential part is the description of the scientific method which led to the results
- enough details must be supplied that an independent researcher could repeat the experiment or calculation to verify the results
- usually longer reviewing process and revision rounds (4-8 weeks)

Letters (short communications):

- maximum 4 pages length
- short descriptions of important current research findings that for immediate publication
- usually fast reviewing process (1-2 weeks), sometimes no revision round

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Scientific journals

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Types of journal papers:

Review articles:

- do not cover original research but accumulate the results of many different articles on a particular topic to give an overview about „the state of the art“
- usually 10-60 pages length with 50-200 processed references
- the recognized researchers of the given field are asked to write the reviews
- after the publishing they became highly cited paper (beneficial for the author and the journal as well)

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Other types of journal publications:

Research notes:

- only 1-2 pages length
- short descriptions of current research findings that are considered less urgent or important than findings published in Letters

Supplemental articles:

- contain materials not appropriate for the main body of the manuscript: a large volume of data; descriptions of routine procedures, derivations of equations, source code, non-essential data, etc.

Data papers:


- articles dedicated to describe datasets
- e.g. Scientific Data and Earth System Science Data.

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Scientific journals publishers

Biggest publishers in the field of electrical engineering and computer science



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Journal ranking methods

„The impact of articles and journals are measured by counting citations”

- The scientific journals have the different „value or rank”
- The rank of the journals are counted by the citations on the published articles with different methods
- The rank is usually indicated by an „impact number” or by the „rank position” of the journal on the given research field
- Mostly used ranking methods:
 - Impact Factor and 5-year impact factor (IF) by Thomson Reuters
 - SCImago Journal Ranking (SJR) and Quartiles rank by Elsevier
 - CiteScore by Elsevier
 - Source Normalized Impact per Year (SNIP) by Elsevier
 - h-index



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Journal ranking methods

Impact Factor (IF)

- The impact factor (IF) of a scientific journal is a measure the yearly average number of citations to recent articles published in that journal.
- Only the citations in the Web of Science (WoS) are counted!
- IF is yearly published
- IF is used to compare journals within a certain field
- <https://jcr.incites.thomsonreuters.com> (Not free of charge)

Calculation: In any given year, the impact factor of a journal is the number of citations, received in that year, of articles published in that journal during the two preceding years, divided by the total number of articles published in that journal during the two preceding years [1]

[1] ^ „Journal Citation Reports: Impact Factor”. Retrieved 2016-09-12.



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Impact Factor (IF)


Problems:

- IF varies highly between the research fields
- editors may adopt to boost their impact factor
- impact factors and citation analysis in general are affected by field-dependent factors and citing habits
- the percentage of total citations occurring in the first two years after publication also varies highly among disciplines (5-year IF helps a bit)
- in the WoS database not all the scientific publications are indexed (like conferences or books)
- self-citations are not excluded

IF of the journals are between 0.1 – 60. (Average IF in engineering science ~ 2)

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Journal ranking methods

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SCImago Journal Ranking (SJR) by ELSEVIER

- the insufficiencies of IF indicated to compose other journal ranking methods
- the latest and biggest concurrency of IF is the SJR
- Basic idea: „not all citations have the same value”
- accounts for both the number of citations received by a journal and the importance or prestige of the journals where such citations come from
- based citations get from the Scopus data base
- <http://www.scimagojr.com/> (free of charge!)

Calculation: the average number of weighted citations received during a selected year per document published in that journal during the previous three years.

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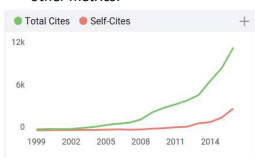
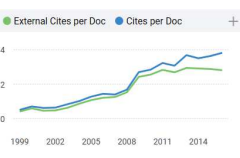
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SCImago Journal Ranking (SJR) by ELSEVIER

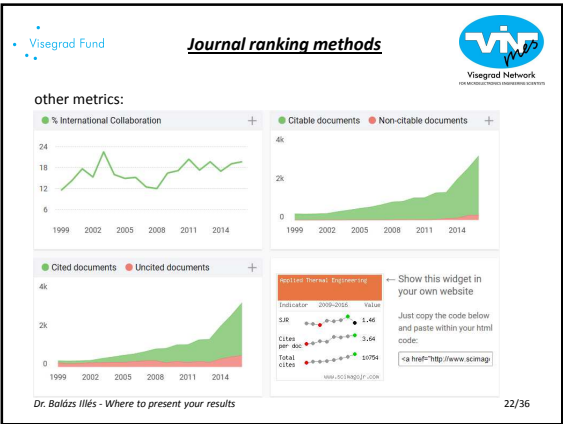
Weighting method is similar to Google page ranking method:

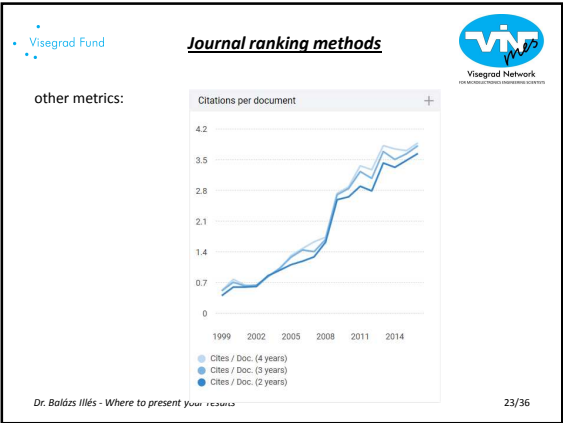
- a citation gets high weight if it comes from a journal which has higher ranking than the cited journal.
- a citation gets low weight if it comes from a journal which has lower ranking than the cited journal.
- other metrics:

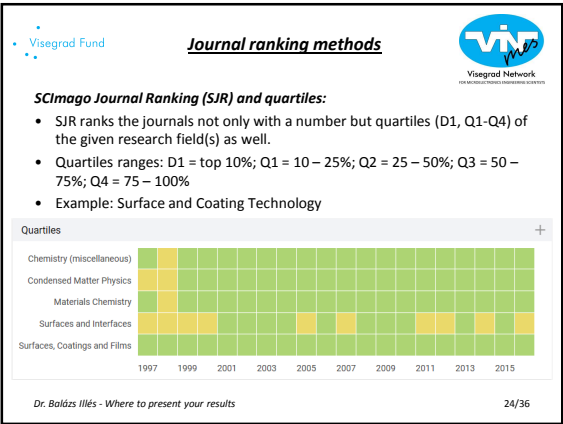



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SCImago Journal Ranking (SJR) by ELSEVIER



SJR „pro and contra“:

- Although the SJR decreases the very high deviation of the ranking numbers (like at IF), but in a given research field the deviation is usually too low, the journals are hardly comparable.
- The **quartiles is a good measurement number** of the journal performance, journals from totally different fields are easily comparable!

Therefore SJR numbers are rarely applied, BUT recently quartiles is widely used in grant evaluations!

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Other metrics:

Source Normalized Impact per Year (SNIP) by Elsevier:

SNIP is defined as the ratio of the raw Impact per Publication (IPP) divided by the Relative Database Citation Potential. The raw Impact per Publication is the same as IPP. The resulting ratio is then divided by the Relative Database Citation Potential.

CiteScore by Elsevier:

CiteScore is essentially the average citations per document that a title receives over a three-year period. (It is simple to replicate. The calculation of CiteScore is straightforward with no secret algorithms or hidden details.)



h-index: „h-index is 10 if 10 articles have each received at least 10 citations“

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Costs of the journal publication

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The publisher has costs about the publishing. Who does pay this cost?

„The author or the reader or both“

Free of charge:

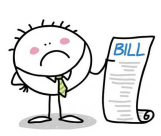
- The publication is totally free of charge
- Most of the journals are working with this method

Free of charge with page limitation:


- Till 4-6 pages the publication is free of charge, but over this limit the author has to pay some contribution (e.g. 100EURO/ pages)
- Usually applied by US publishers

Publication fee is charged:

- Some very recognized journals (like Nature) charges some publication fee (~500Euro / article) in order to decrease the number of applicants



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Copyrights

„Who will own the copyrights of the published article?“ :
Copyrights goes to the publisher (no any part of the paper including the figures can be published again without the permission of the publisher)


„Who and how can access to the published article?“ :
 Two different systems are existing: **„Subscription based“** (you need to pay to access) and the **„Open access“** (everybody can read the article for free)

Open access approach:

- If the access is free to the article then the probability of citation is higher
- If the research which led to the article is sponsored by common money (by governments) then the results has to be freely reachable by the people
- Most of the journals offer the open access option, BUT for very high contribution fee (2000-4000 Euro/ article)



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Predatory journals

Recently the number of so called „Predatory journals“ are increasing!


- they offer **„easy publication possibilities“ for money**, without any quality insurance of regular journals (like peer-review)
- „everything can be published for money“
- **the value of such a publications are zero** in scientific rankings and measurements

How can you recognize them?:

- offering their services in emails
- usually presenting very high fake IF and/or indexing date bases which have very similar names to the real ones.
- the publication is never free (500-1500 EURO/article)
- they are collected in date bases, like <https://beallist.weebly.com/>



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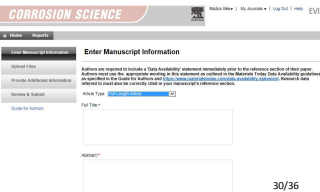
Journal publication process

„Process steps from submission to acceptance“

1. Submitting the manuscript to the journal

- All journals have their own **rigorous manuscript format** about figures, references, text formatting, etc. (It will be discussed later in details)
- Before the submission always **check the „guide for authors“** at the journal webpage!
- All journals have a **submission system** (like „EVISe“)
- Registration is necessary in the submission system





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Journal publication process

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2. Formal checking the manuscript by the editors (<1 week)

• Checking the format of the manuscript by text editors

• Checking the topic of the paper by the journal editor

• **Plagiarism check** by automatic software (later in details)

• If something is not appropriate then the manuscript is send back to the authors or rejected.

2. First review of the manuscript by the reviewers (2 – 8 weeks)

• After the formal checking the journal editor will assign the manuscript to reviewers (typically 2-5 reviewers)

• The reviewers examine the manuscript form professional and scientific aspects

• The reviewers do a report about their opinion and give a suggestion to the editor about the manuscript

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TIME FOR REVIEW

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3. First decision about the manuscript by the editor (< 1 week)

• According to the reviewers opinion the editor makes a decision:

– **Accept the manuscript** in the present form (rare)

– **Minor revision** of the manuscript without further reviewing process (more frequent)

– **Major revision** (rewrite) of the manuscript with further reviewing process (frequent)

– **Reject** of the manuscript (frequent)

4. Revision of the manuscript by the authors (optional, 4-8 weeks)

• The authors revise the manuscript according to the reviewers suggestions and send back to the journal

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KEEP CALM AND START REVISING

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5. Second review the reviewers (optional, ~2 – 4 weeks)

• The revised manuscript is examined again usually by the same reviewers

• The reviewers makes their suggestions to the editor

6. Further revision and review rounds (optional and rare)

• Further revision (usually only minor) can happen

• „2nd major revision with further reviewing process” is rare

• If the authors cannot improve the manuscript significantly during the first revision then it is usually rejected

7. Acceptance of the manuscript for publication by the Editor

• Get a formal **acceptance letter** („proof” of the publication)

• Manuscript is transferred to the publication offices


• **Acceptance rate** of the journals can vary significantly (1 - 99%), in microelectronics ~15-25%


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WELCOME TO ACCEPTANCE ENJOY YOUR JOURNEY

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Journal publication process


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processing...



8. Processing of the accepted manuscript by the publication office (1-2 weeks)

- The publication fee has to be paid by the authors (optional)
- Signing the **copyright forms** of the journal
- Editing of the manuscript to the final format by the text editors
- **Proofreading** and corrections of the final format by the authors

9. Publication of the paper by the publisher office (1-20 weeks)


- The paper gets the DOI number and it will be published on the web page of the journal (early citation is possible!)
- The paper gets the final bibliographic data (volume and page numbers) in 1-20! Weeks (depends on the journal „habits“)


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Plagiarism


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„Recently plagiarism is a hot topic in the science“

According to the Oxford English Dictionary:

- **Plagiarism** is **“stealing and publication”** of another author’s „thoughts, ideas, or expressions“ and the **representation of them as one’s own original work**

In the science another type of plagiarism is known,


- **The auto or self plagiarism** means the republication of our papers or some parts of the papers
- The auto plagiarism **violates the copyrights** of the publishers!
- Sometimes it is hard to avoid (e.g. description of a process or a measurement method)


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Plagiarism


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Plagiarism check:

- **Plagiarism** is checked by the publishers after the submission of the manuscripts by plagiarism check software
- Plagiarism software: iThenticate (IEEE), Crossref (Elsevier), etc..
- Plagiarism software checks „same world connections“ over 4-6 worlds (it can be set manually)
- The allowed ratio is usually 20-25%, excluded the affiliations of the authors and the reference list

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