

MedSci

谈SCI论文写作技巧----个人经验

May, 2010

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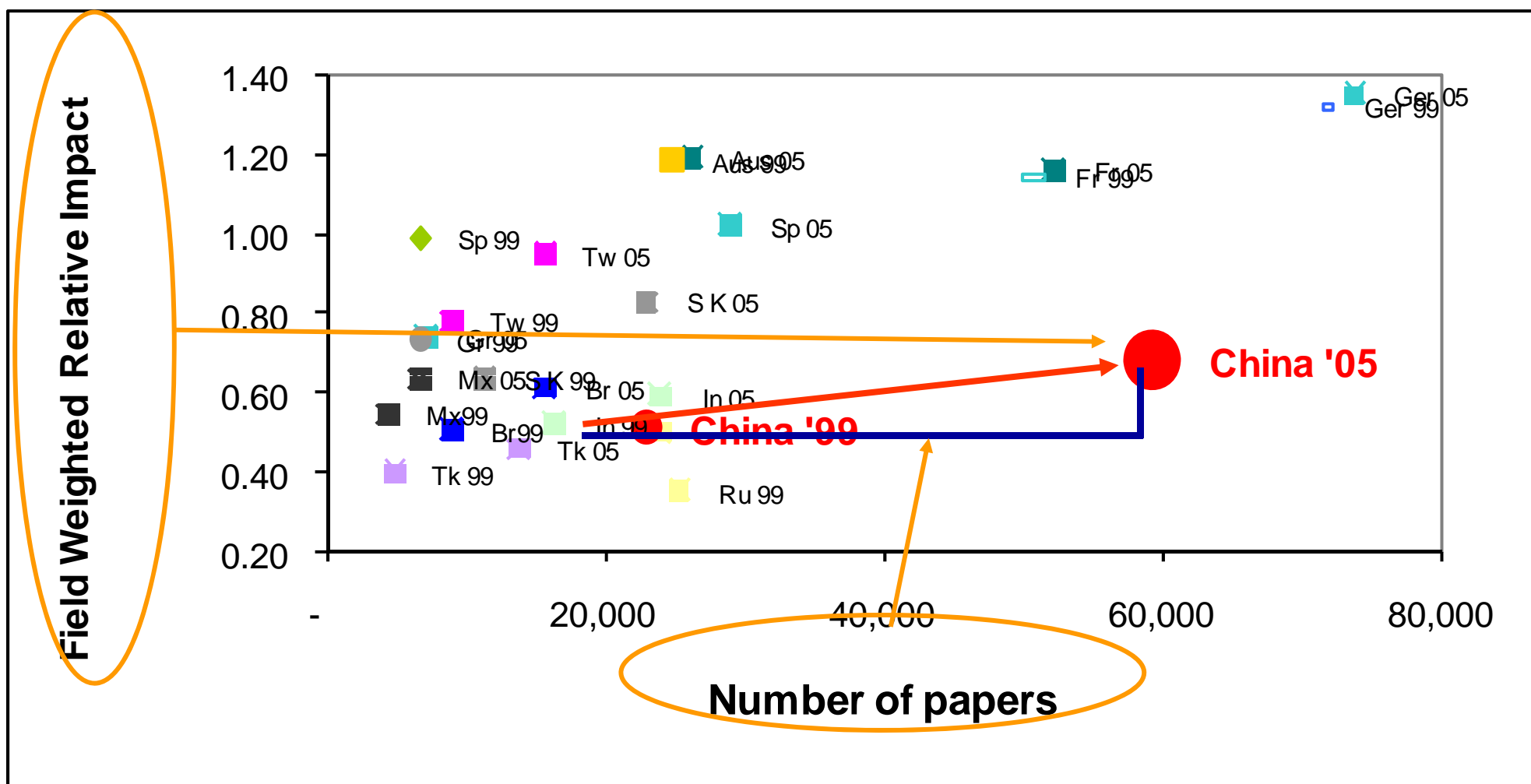


Outline大纲

- ◆ starting事前准备
- ◆ Construction of an article论文架构
- ◆ Technical details技术性细节

Current status of Chinese articles 华人论文发表现状

论文数量从1999年起呈指数增长，但低品质的论文中，中国大陆的论文占70%！如何改善这一状况？（对待科研的态度：从思路设计，实验，写作全方位提高！）



So what is the problem for reject?

“A great deal of **excellent research** is submitted from China.” “有很多精湛的研究是从中国地区所投的稿。”

But,但是

- ◆ “I have encountered the following serious issues...” “我有遇到了以下严重的议题...”
- ◆ Papers not suited to this journal
- ◆ Paper is a replication study or adds little to the field 论文是复制研究或对该领域的只有一点点贡献
- ◆ Plagiarism (especially of small parts of a paper) 抄袭(尤其是论文中的一些小部分)
- ◆ “The following problems appear **much too frequently**” “以下问题**太常**出现”
- ◆ Papers which are clearly out of scope 论文明显偏离范畴
- ◆ Failure to format the paper according to the Guide for Authors 格式未遵照作者指南编排
- ◆ Inadequate response to reviewers 不适当(或没有)建议审稿者
- ◆ Inadequate standard of English 英文程度不足
- ◆ Resubmission of rejected manuscripts without /or with minor revision 被拒绝的论文没经修改就重新投稿

– Peter LaPlaca, Editor, *Industrial Marketing Management*


Starting 事前准备


1. Check the originality of your idea 检查你概念的原创性
 - Have you done something **new** and **interesting**? 你有做了些**新的**与**引人兴趣的**事吗？
 - Is there anything challenging in your work? 在你的研究工作中有任何挑战吗？
 - Is the work directly related to a current hot topic? 研究工作与目前热门主题有直接关联吗？
 - Have you provided solutions to any difficult problems? 你有对任何困难的问题提供解决之道吗？

**If all answers are “yes”, then start preparing your manuscript.
如果全部的答案都是 “yes”, 那么就可开始准备你的论文。**

TRACK the latest results regularly in your field. New and relevant articles get published all the time. **定期追踪** 你领域中的最新结果。新的以及相关的论文不断地被发表。

Scopus: 356 **Web** (15,108) Patents (81) SelectedSources (17) [Search your library](#)

Your query: (TITLE-ABS-KEY(mcmc) AND TITLE-ABS-KEY(parameter estimation)) [Edit](#) [Save](#) [Save as Alert](#) 

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<input type="checkbox"/> Computational Statistics and Data Analysis (16)	<input type="checkbox"/> Andrieu, C. (10)	<input type="checkbox"/> 2006 (71)	<input type="checkbox"/> Review (14)
<input type="checkbox"/> Statistics in Medicine (9)	<input type="checkbox"/> Godsill, S.J. (9)	<input type="checkbox"/> 2005 (59)	
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Added to Scopus in the last days

Subject Areas 

- Life Sciences (> 3,400 titles)
- Physics

References
Conference
Article Title, Abstract, Keywords, Authors
Chemical Name
CAS Number

reserved. 6

2. Decide the type of your manuscript 决定稿件类型

- Full articles 全文/Original articles原始著作;
- Letters 书信/Rapid Communications 快报/Short communications 简报;
- Review papers/perspectives 评论论文/观点;
- Case study 个案研究

- Self-evaluate your work: Is it sufficient for a full article? Or are your results so thrilling that they need to be shown as soon as possible?
自我评估：是否足够成为全文?或是你的结果是令人兴奋到需要越早公布越好?

- Ask your supervisor and colleagues for advice on manuscript type. Sometimes outsiders see things more clearly than you.
征求你的指导教授和同事指点稿件类型。有的时候当局者迷、旁观者清。

Construction of an article 论文架构

Content vs. presentation 内容与呈现方式之比较

◆ **Content is essential** 内容是必要的

Contains a clear, useful, and exciting scientific message 包含清晰的、有用的与令人振奋的科学讯息

◆ **Presentation is critical** 呈现方式是关键

Conveys the authors' thoughts in a logical manner such that the reader arrives at the same conclusions as the author 用逻辑方式传达作者的想法以使读者到达与作者同样的结论

Constructed in the format that best showcases the authors' material

以最能展示作者数据的格式来架构

Written in a style that transmits the message clearly 用能清楚传达讯息的风格来写作

A good manuscript leads readers to scientific significance immediately.

一篇好的稿件可以马上引导读者们到科学显著性

The general structure of a full article

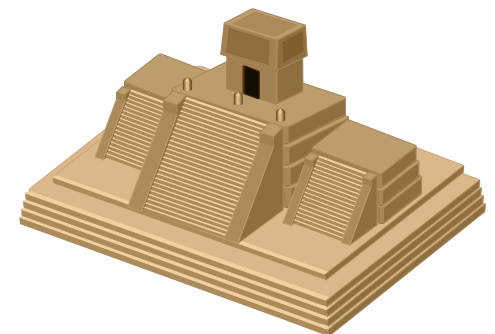
- Title 题目
- Authors 作者
- Abstract 摘要
- Keywords 关键词

Make them easy for indexing and searching! (informative, attractive, effective) 使他们容易来检索与搜寻! (有益的, 吸引人的, 有效的)

- Main text 主文 (IMRAD)
 - ◆ Introduction 绪论
 - ◆ Methods 方法
 - ◆ Results 结果
 - ◆ And 与
 - ◆ Discussion 讨论 (Conclusions 结论)

Each has a distinct function. 每个都有明显的功能

- Acknowledgements 感谢文
- References 参考文献
- Supplementary material 补充资料



- The progression of the thematic scope of a paper: 论文主题范畴之进展:

general 一般的 → **particular** 特定的 → **general** 一般的

- However, we often write in the following order: 然而，我们通常会以下列的顺序来写：

- ◆ Figures and tables 图与表
- ◆ Methods, Results and Discussion 方法、结果与讨论
- ◆ Conclusions and Introduction 结论与绪论
- ◆ Abstract and title 摘要与题目



1. Title 论文题目

- A good title should contain the **fewest** possible words that **adequately** describe the contents of a paper. 一个好的题目应该只含可**适当地**描述论文内涵的**最少**可能字数。
- **Effective titles** 有效的题目
 - ◆ Identify the **main issue** of the paper 确认论文的主要议题
 - ◆ Begin with the **subject** of the paper 从论文的主题开始
 - ◆ Are **accurate, unambiguous, specific, and complete** 是精准、清楚、明确且完整的
 - ◆ Do not contain infrequently-used abbreviations 不含罕用的缩写
 - ◆ **Attract readers** 吸引读者

title example

Subject 主题

Example 例子

The main issue
主要议题

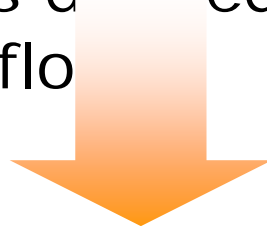
The role of early customers in
the commercialization
of innovation: the case of high-
technology markets

Specific 明确

- ❑ Characterization Of Selenocysteine (SEC) tRNA Population in Drosophila.
- ❑ Nonrandom Cytogenetic Alterations in Hepatocellular Carcinoma from Transgenic Mice Overexpressing c-Myc and Transforming Growth Factor Alpha in the Liver.
- ❑ Selenium Metabolism in Drosophila: Characterization of the Selenocysteine tRNA Population.
- ❑ Differentiation of non-beating embryonic stem cells into beating cardiomyocytes is dependent upon down regulation of PKC beta and zeta in concert with up regulation of PKC epsilon.
- ❑ Desmoplakin is required for microvascular tube formation in-vitro.
- ❑ Microvascular Tubes Derived from Embryonic Stem Cells Sustain Blood Flow.

Keep a title short!

- ❑ The market orientation—product innovation—performance relationship and the moderating effects of the industry's five competitive forces
- ❑ Microvascular tubes derived from embryonic stem cells sustain blood flow



- ❑ The impact of competitive forces on the relationship between market orientation and innovation

向解释和联盟的成功：胜任,资源,有关的因素和资源对理论有利

3. Abstract

□ There are 3 main types of abstract. 有3种主要摘要类型

◆ **Indicative (descriptive) abstract 叙述性摘要** outlines the topics covered in a piece of writing so the reader can decide whether to read the entire document. Often used in review articles or conference reports. 概述文章所含概的论题，如此读者可以决定是否要看整篇论文。常用于评论论文或研讨会报告

◆ **Informative abstract 信息性摘要** summarize the article based on the IMRAD structure, but without these words explicitly presented. 依IMRAD结构来概述论文，但没有明确呈现这些文字

◆ **Structured abstract 架构性摘要** follows headings required by the journal. Often used in Medical journals. 遵循期刊所要求的标题。常用于医学类期刊

□ Check carefully which type fits the journal of your choice.

仔细检查哪种摘要类型适合你所选的期刊

The abstract: the advertisement of your article

A good abstract 一篇好摘要

- Is precise and honest 精准且诚实
- Can stand alone 可以独立
- Uses no technical jargon 不用专业术语
- Is brief and specific 简短且明确
- Cites no references 没有引用参考文献

The quality of an abstract will strongly influence the editor's decision

摘要的品质将会强烈地影响编辑的决定

4. Keywords: Used for indexing

- Check the Guide for Authors! (Number, label, definition, thesaurus, range, and other special requests)检查作者指南! (数字、标示、定义、汇编、页数与其他特别要求)
- Avoid words with a broad meaning. 避免广义字。

Words selected should reflect the essential topics of the article... Do not select “marketing” . 所选的字应该要反映出论文之基本论題...不要选择 “营销” 。

- Only use abbreviations firmly and unambiguously established in the field.只使用该领域已被稳固地且明白地确立的缩写。

e.g., Does CRM mean Customer Relationship Management or Cause-Related Marketing?例如：CRM代表 Customer Relationship Management还是 Cause-Related Marketing?

5. Introduction: convince readers that your work is important

□ Answer a series of questions:

回答一系列问题:

- ◆ What is the problem? 问题是什么?
- ◆ Are there any existing solutions? 有任何现行的解决方法吗?
- ◆ Which is the best? 哪一个是最好的方法?
- ◆ What is its main limitation? 其主要限制是什么?
- ◆ What do you hope to achieve? 你希望可以达成什么?

Provide sufficient background information to help readers evaluate your work.

General background (review articles cited) → problems investigated particularly in this piece of research (review the main publications on which your work is based.)
 一般背景(回顾所引用的文章) → 在本研究中所特别钻研的问题 (探讨你的研究所根据的主要论文著作)

Convince readers that your work is necessary. 说服读者们你的研究是有其必要性。

Use words or phrases like “however”, “remain unclear”, etc., to address your opinions and work 使用字或词组像“然而”、“仍然不明”等来提及你的意见与研究

Pay attention to the following 注意以下事项

- You want to present your new data, but you must put them into perspective first 你想要展示你的新数据，但是你必须要先透视它们
- Be brief, it is not a history lesson 简洁有力，这不是历史课
- Do not mix introduction, results, discussion and conclusions. Keep them separate 不要混淆绪论、结果、讨论与结论。将它们分开
- Do not overuse expressions such as “novel”, “first time”, “first ever” 不要过度使用像是“新颖的”、“首次”、“破天荒第一次”的措辞。
- Citing relevant references is very important 引用相关的文献是非常重要的

6. Methods: how did you study the problem?

The basic principle: to provide **sufficient information** so that a knowledgeable reader can **reproduce** the experiment, or the derivation. 基本原则：提供**充足的信息**以便有见识的读者可以**复制此**试验或研究起源

◆ Empirical papers 实证论文

material studied, area descriptions 研究材料, 区域说明

methods, techniques, theories applied 方法、技巧、所应用的理论

◆ Case study papers 个案研究论文

application of existing methods, theory or tools 现存方法、理论或工具之应用

special settings in this piece of work 此研究的特别情景

◆ Methodology papers 方法论论文

materials and detailed procedure of a novel experimentation 一项新颖实验的材料与细节过程

scheme, flow, and performance analysis of a new algorithm 一个新算法的计划、流程与绩效分析

6. Methods: analytical techniques? 方法:分析技巧?

- ◆ Describe analytical methods if not universally understood 解释不被普遍了解的分析方法
- ◆ Why was this method chosen? 为什么选择这个方法?
- ◆ What are the method' s data requirements?使用这个方法的数据必要条件是什么?
- ◆ What are the major concerns when using this technique?用这个方法时的主要顾虑是什么?
- ◆ If necessary cite justification for selection of the method.如果有需要,引述正当的理由来解释为何选择此方法。

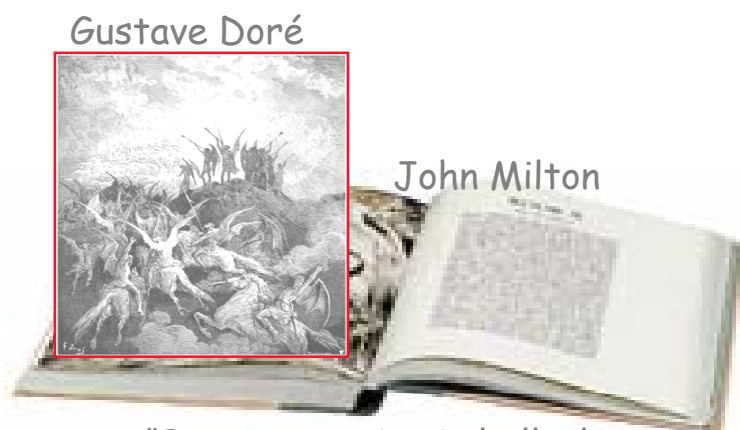
7. Results– what have you found?

The following should be included in this part. 研究结果应包含以下部份。

- ◆ the **main findings** listed in association with the methods 与研究方法有关联的**主要发现**列述
- ◆ The **highlighted difference** between your results and the previous publications (especially in case study papers) 你的结果与先前的论文著作(尤其是个案研究论文)之间的**差异显现**
- ◆ Results of **statistical analysis** 统计分析结果
- ◆ Results of **performance analysis** (especially in methodology, or algorithm papers) **绩效分析**结果(尤其是方法论或算法性论文)
- ◆ A set of **principle equations or theorems** supporting the assumptions after a long chain of inferences (especially in the theory papers) 在一长串推论后, 一组支持假定的**原理方程式或定理** (尤其是理论性论文)

A figure is worth a thousand words...

- Figures and tables are **the most efficient way to present results**. 图表是呈现结果最有效率的方法。
- Your data are the driving force of the paper. Therefore, your illustrations are critical! 你的数据是论文的驱动力。因此，你的图示是关键



"Better to reign in hell, than serve in
heav'n." (*Paradise Lost*, 1. 263).

Make captions self-sufficient 使标题一目了然

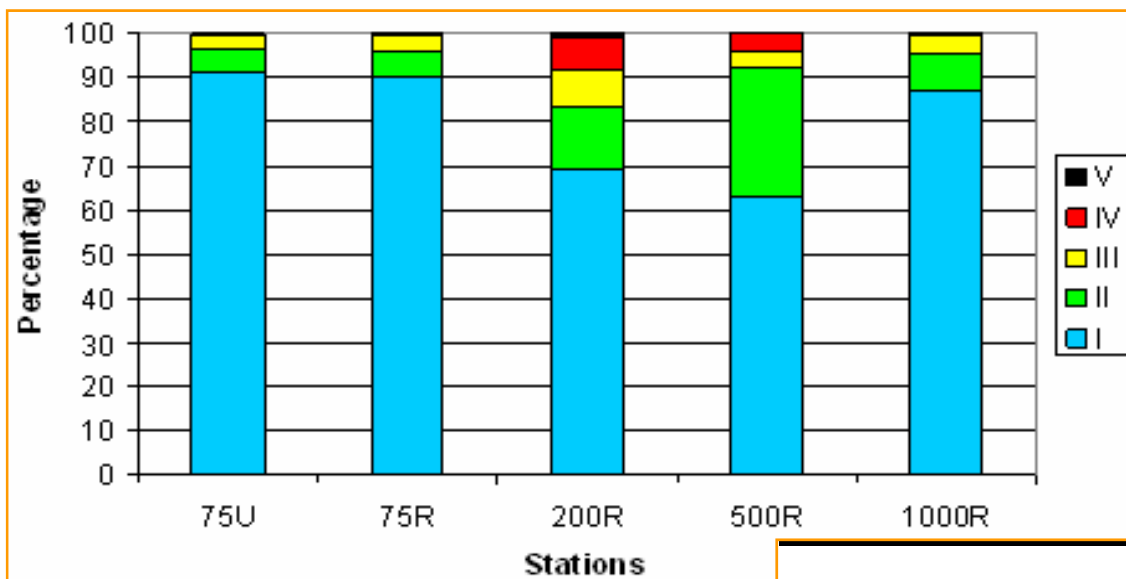
- The captions of figures and tables should contain sufficient information to make the figures self-explanatory. 图表标题应有充足的信息使图一目了然，不需再多加解释。

“Readers... often look at the graphics first and many times go no further. Therefore, the reviewer should be particularly sensitive to inclusion of clear and informative graphics. 读者們... 通常先看图解而且往往不再继续看其它部份。因此，审稿者应该是会对清楚及供给知识的图解特别敏感。

– Henry Rapoport, Associate Editor, *the Journal of Organic Chemistry*

No illustrations should duplicate the information described elsewhere in the manuscript. 图表的说明不应复制自论文内在其他处已叙述的信息

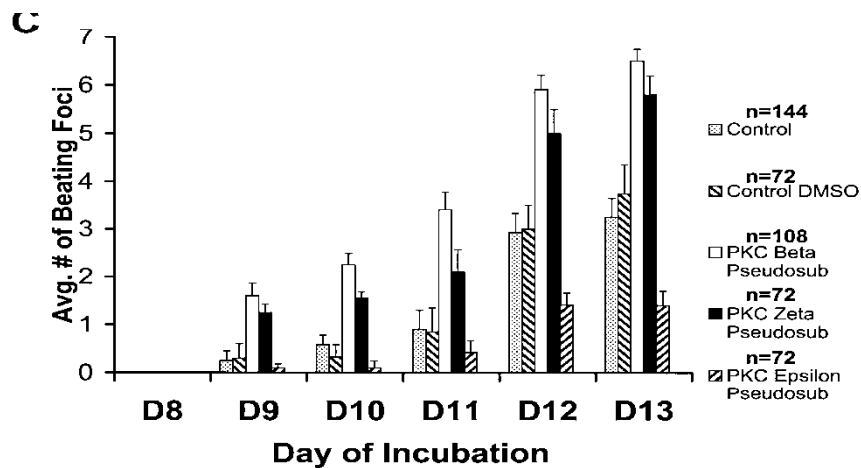
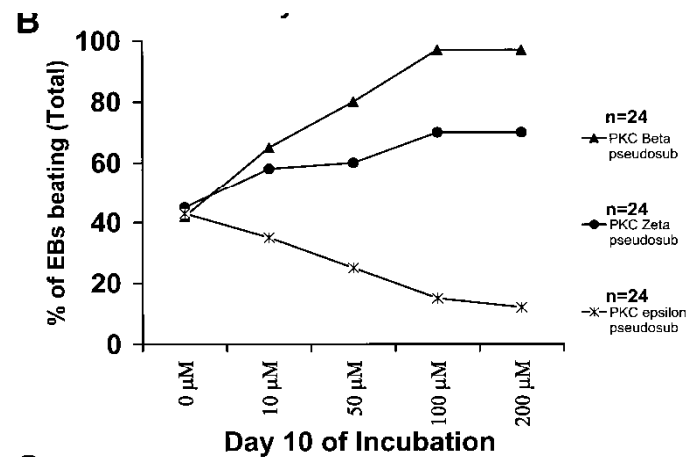
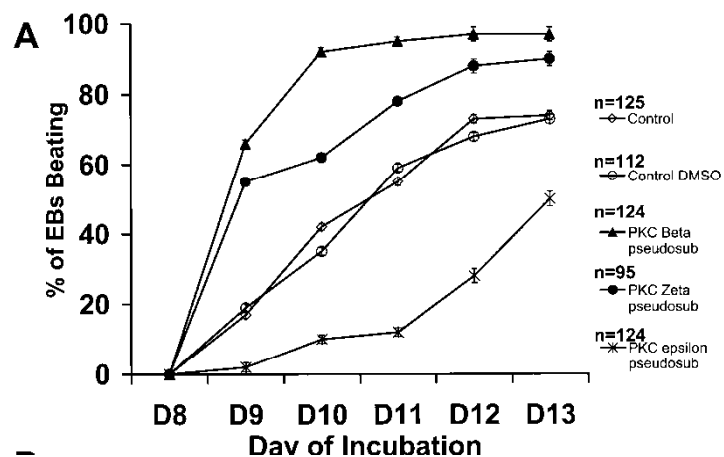
Example 例子



Generally, tables give the actual experimental results. In this case, the table is more direct and clear. 通常，表提供实际的实验结果。在本例中，表是更直接且清楚的。

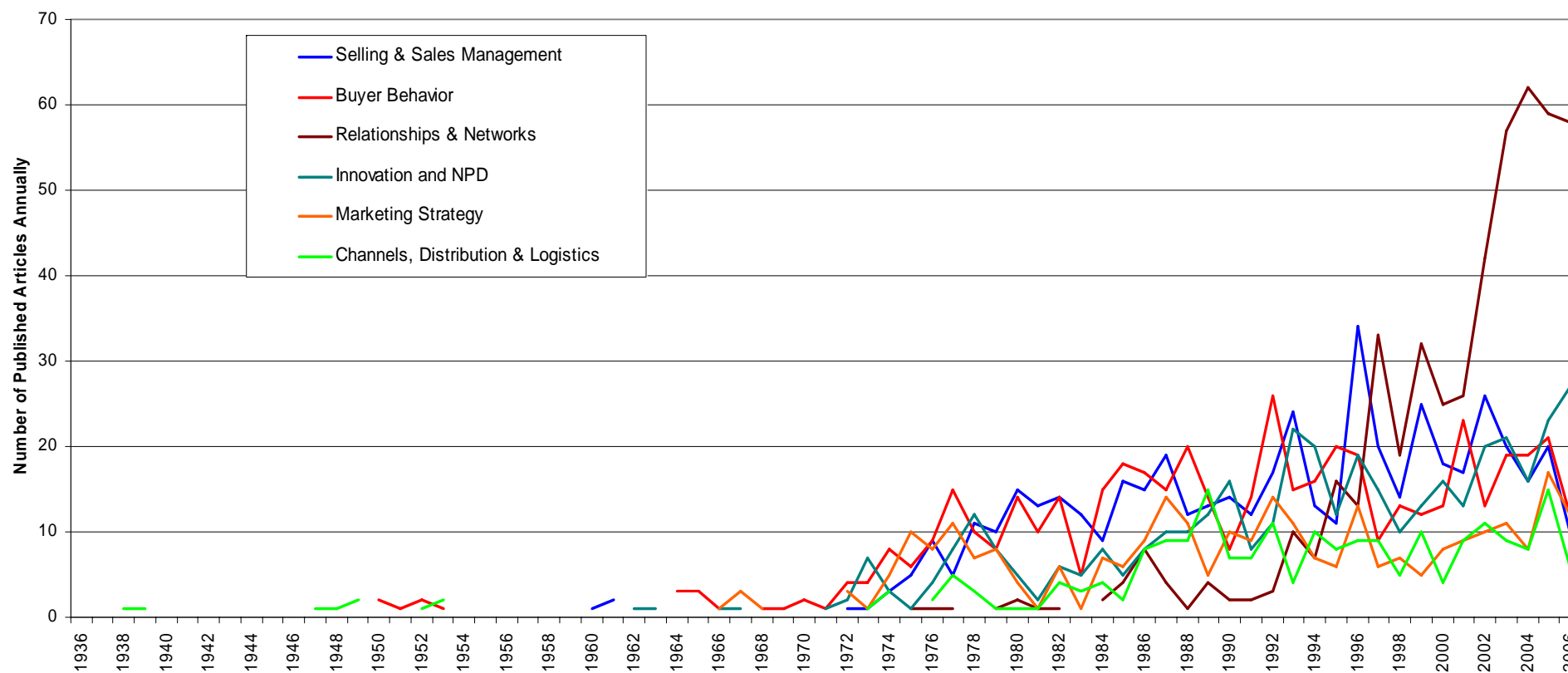
The graph repeats what the table describes. 图重复表的描述。

ECOLOGICAL GROUP					
Station	I	II	III	IV	V
75U	91.3	5.3	3.2	0.2	0.0
75R	89.8	6.1	3.6	0.5	0.0
200R	69.3	14.2	8.6	6.8	1.1
500R	63.0	29.5	3.4	4.2	0.0
1000R	86.7	8.5	4.5	0.2	0.0



Do not use confusing figures!
 不要用令人眼花瞭亂的圖

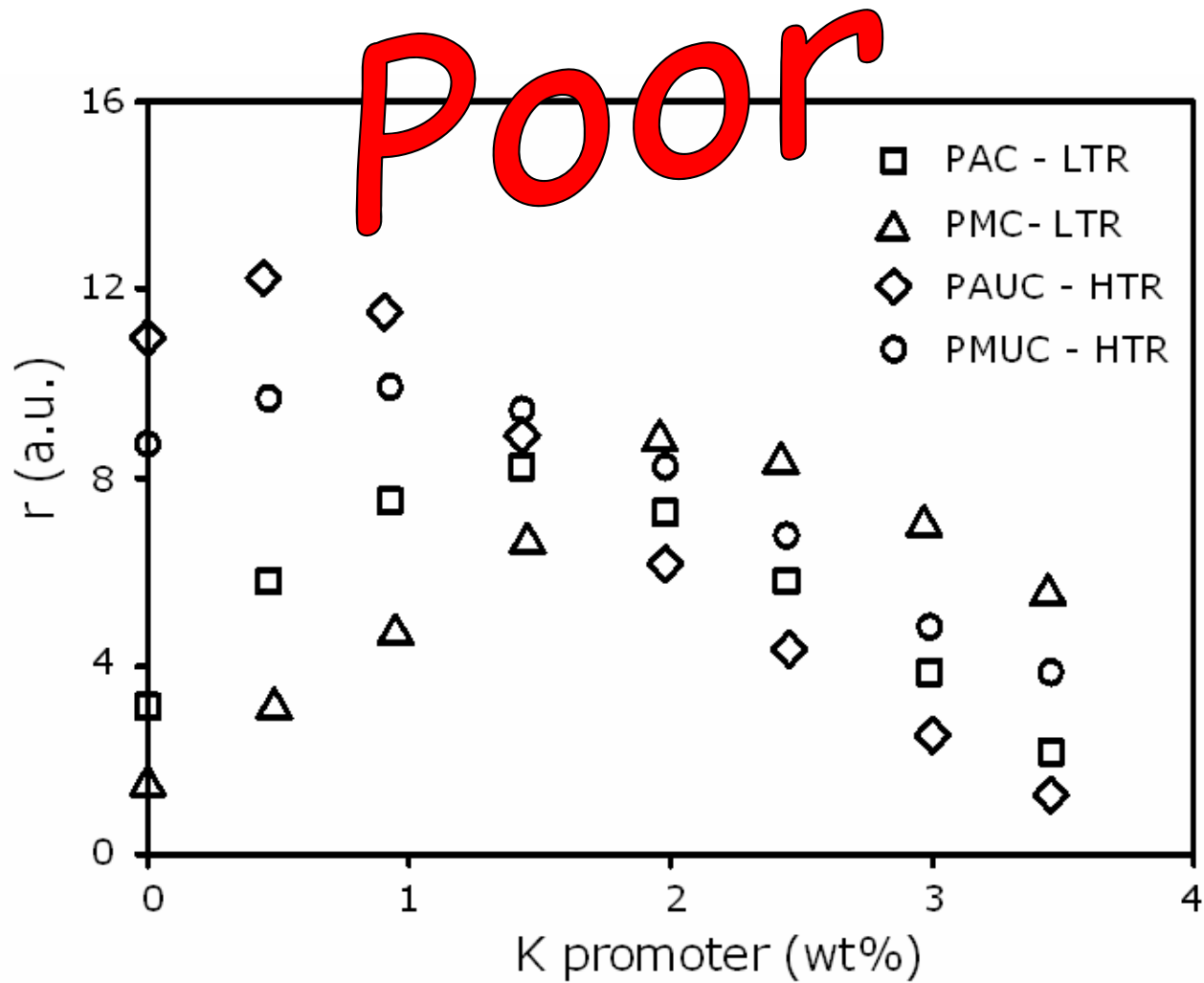
General IM Research Areas 1936-2006

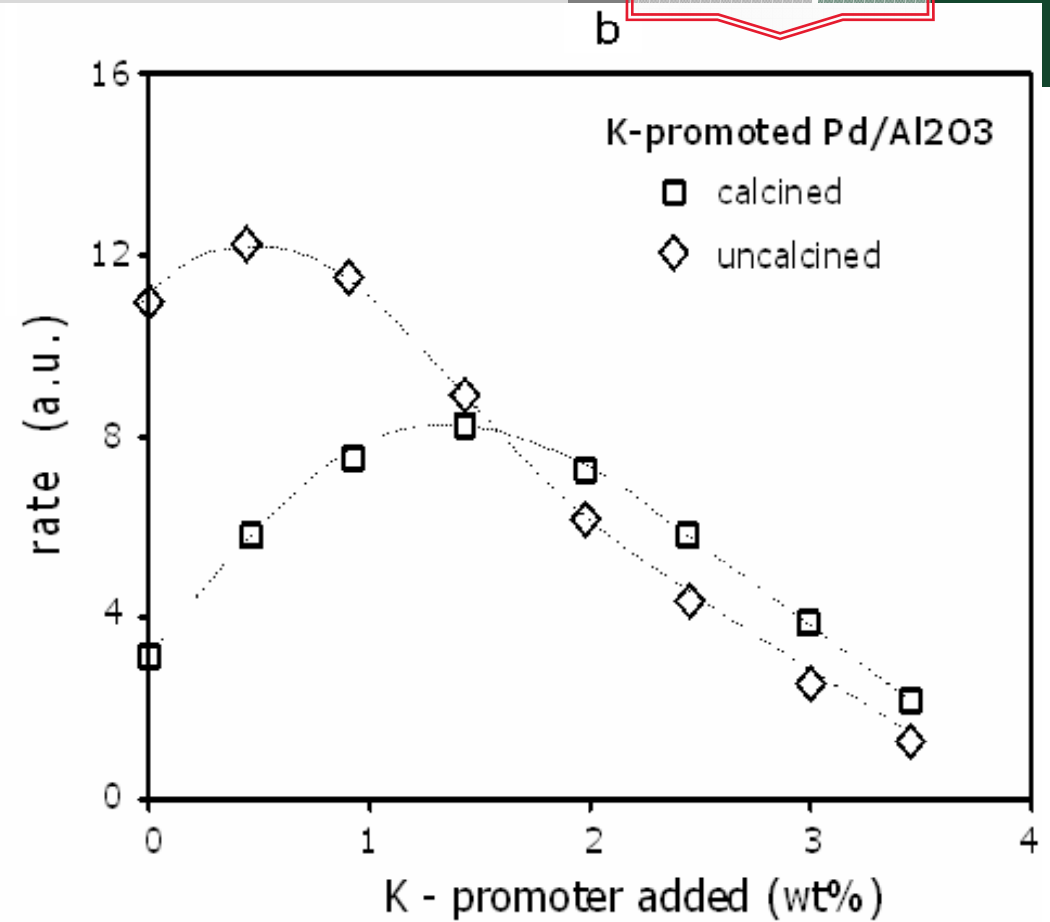
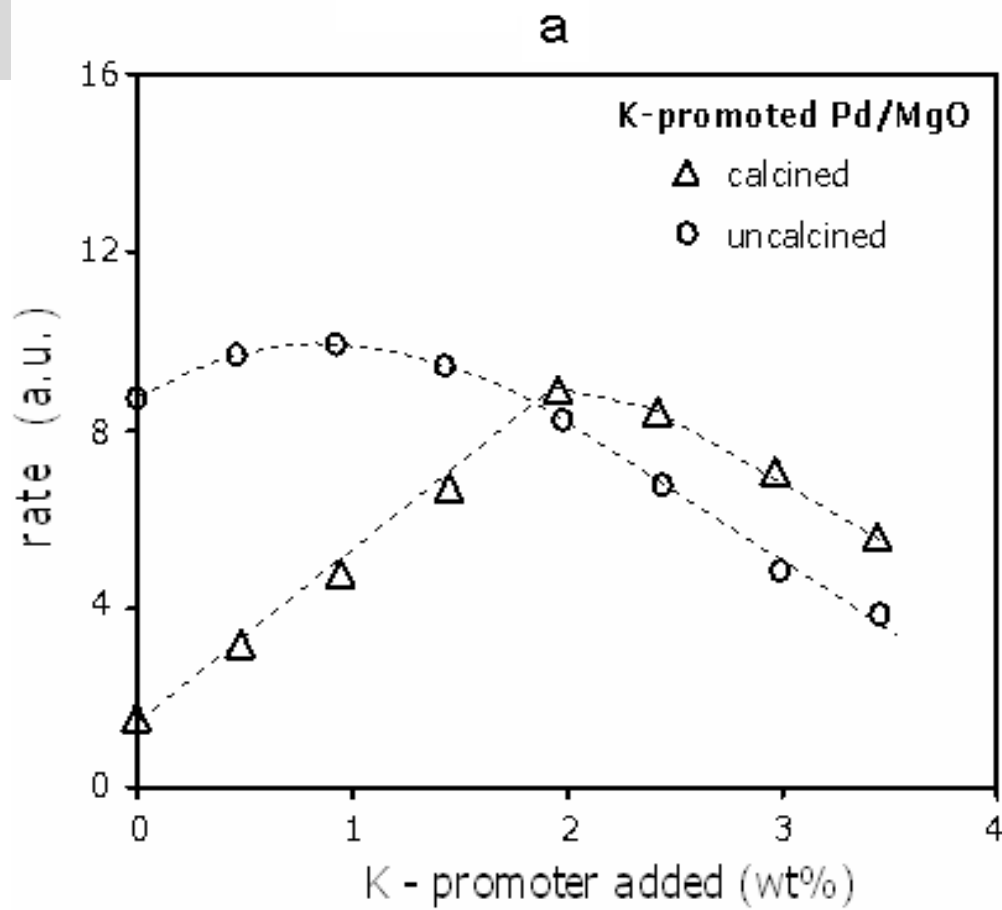


Appearances count! 外观重要

- Plot 3 or 4 data sets per figure;
- Use subplot panels to assemble figures which illustrate the same type of problem
- Well-selected scales; appropriate axis label size; symbols clear to see and data sets easy to discriminate

Revision of a figure





Bett

Use color ONLY when necessary

an unreadable figure with the unnecessary usage of color 色彩的不必要使用使图表难以辨认

Example 1 例子 1



Fig.1 TEM image of purified MWNTs

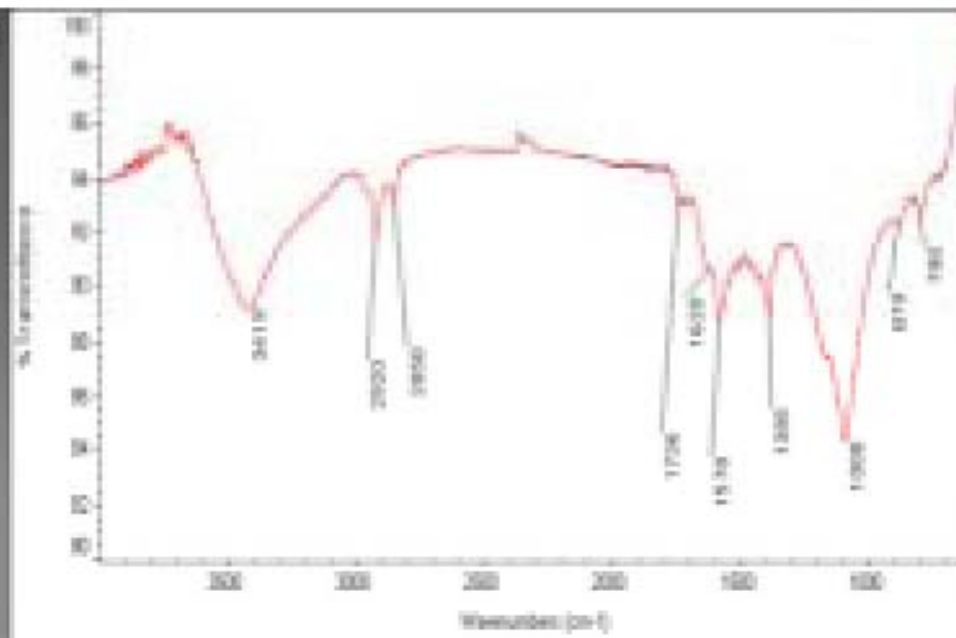


Fig.2 FTIR spectra of purified MWNTs

8. Discussion – what the results mean

Check for the following: 检查以下事项:

- ◆ How do your results relate to the original question or objectives outlined in the Introduction section? 你的结果是如何与原本在绪论中所概述的研究问题或目标有相关?
- ◆ Can you reach your conclusion smoothly after your discussion? 你可以在讨论完后, 很顺畅地得出你的结论吗?
- ◆ Do you provide interpretation for each of your results presented? 你有为每一呈现的结果提供解释吗?
- ◆ Are your results consistent with what other investigators have reported? Or are there any differences? Why? 你的结果与其他研究者所记述的结果一致吗? 或是有不同的差异? 为什么?
- ◆ Are there any limitations? 有任何限制吗?

Do not 不要

- ◆ Make statements that go beyond what the results can support 做超出结果所能支持的陈述
- ◆ Suddenly introduce new terms or ideas 突然介绍新的术语或想法

E.g., 低 (Low)/高(high); 非常地(Extremely);
庞大的(Enormous); 快速地(Rapidly);
戏剧性的(Dramatic); 大量的(Massive);
相当地(Considerably); 极度地(Exceedingly);
主要的(Major); 次要的(minor); ...

They are often qualified by very, quite, slightly,
etc. 非常、相当、稍微地 ...等也要慎用。

Quantitative description is always preferred. 数量化叙述总是较好的

Watch out for non-quantitative words!

Poor 不充足的

- There was a significant relationship between last year's satisfaction score and this years profit margins. 今年的利润率与去年的满意度之间有显著关系。

Better 较好的

- There was a .72 R^2 between profit margin and year earlier customer satisfaction scores 利润率与去年的满意度之间有.72 R^2

9. Conclusion: How your work advances the field from the present state of knowledge

A clear conclusion section helps reviewers to judge your work easily.

Do

- ◆ Present global and specific conclusions, in relation to the objectives.
- ◆ Indicate uses, extensions, and limitations if appropriate
- ◆ Suggest future experiments and point out those that are underway.

Do not

Summarize the paper (the abstract is for that purpose)

Make a list of trivial statements of your results

Make judgments about impact

Use uncertain words such as “might” , “probably”

Suggested length of a full article

- "...25- 30 pages is the ideal length for a submitted manuscript, including **ESSENTIAL data only**
- Follow guidelines for the target journal (example)

Abstract 摘要	1 paragraph 段落 (100-150 word 字)
Introduction 绪论	1.5-2 manuscript pages 页 double-spaced 双倍行距, 12pt 字型
Methods 方法	2-4 manuscript pages 页
Results and Discussion 结果与讨论	10-12 manuscript pages 页
Conclusions 结论	1-2 manuscript pages 页
References 参考文献	20-50 items 则
Figures 图	6-8
Tables 表	1-3
- Letters or short communications have a stricter limitation of the length. For example, 3000 words with no more than 5 illustrations.

More Information 更多信息

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Questions? 问题

Thanks! 谢谢

