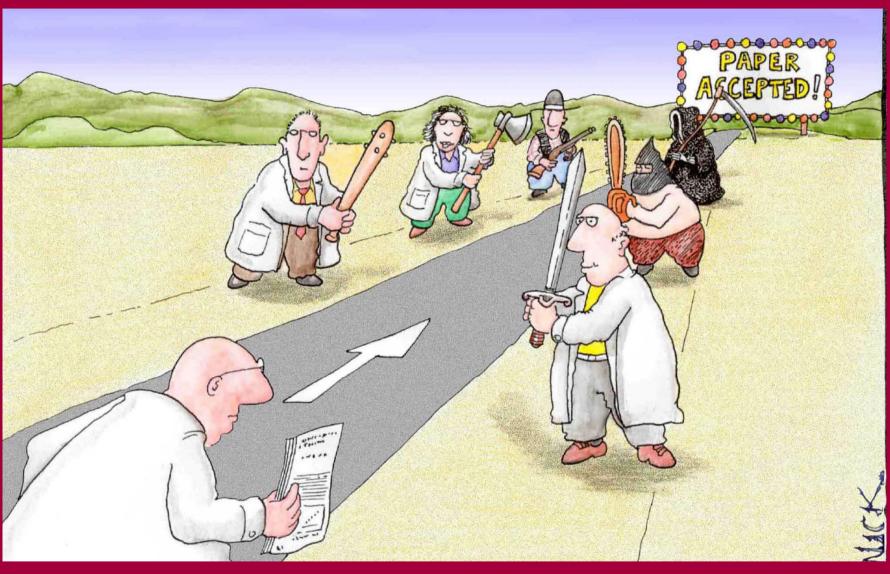
Scientific Publishing



Warwick, 8th September 2010

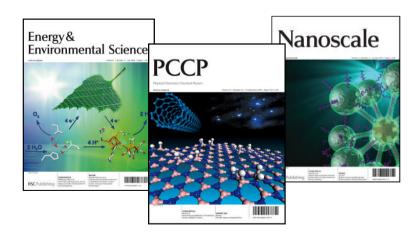
Philip Earis Editor

Outline

- Who am I?
- Why publish?
 - Peer review processes
- Where to publish?
- How to publish?
 - Structure a paper
 - Ethics
 - Navigate the minefield Editor's tips

Who am I?

- Managing Editor at RSC Publishing
- Physical Chemistry Chemical Physics (PCCP)
- Faraday Discussions
- Energy & Environmental Science
- Nanoscale





The Royal Society of Chemistry

- Learned society
- Professional body
- Charity
- 46000+ members



- International not-for-profit publisher
 - Surplus from publishing supports RSC's charitable and scientific activities

Introduction to RSC Publishing

- Based in Cambridge
- 200+ staff
- All editorial staff trained:
 - Scientists
 - Professional Editors
- Publishing 30+ Journals
 - >80000 pages per annum
 - Historical 170-year archive
- 60 Books per year
- Databases, such as Analytical Abstracts
- Chemistry World / magazines





RSC Journals



My role as Editor

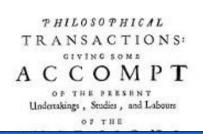
- Manage journals, to ensure they contain best new science
 - Make publication decisions on 5000+ submissions a year
 - Meet current and potential authors, readers and referees
 - Communicate our standards and ensure journals' have high visibility

Outline

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A Brief History of Scientific Publishing

Year	Enabling Technology	Characteristics
1660- 1990	Paper, printing press	Print publication in consistent format
1990- 2005	Computers, the internet	Print + electronic publication, linking of articles, databases (eg SCI)
2005- RSCPubl	Web 2.0	Enhancing publication, "dynamic" articles



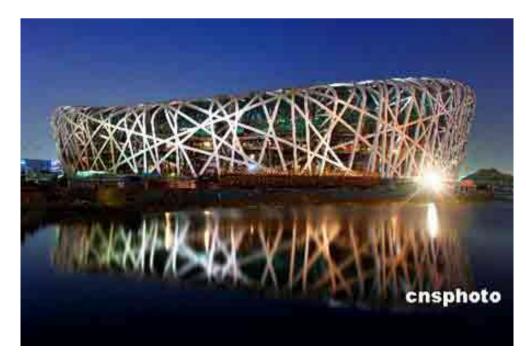


Why do researchers publish?

- To share information, to advance science
- For "quality control" of research
- As a requirement for funding / promotion / assessment
- For recognition and approval



Peer-review journals



Why use Peer Review?

Authors

Validates

Mark of quality

Improves article

by feedback

Requirement for publication

Readers

Validates

Mark of quality

Improves article and journal

Selection process

Referees

Reciprocal activity

Can help with authorship

Professional activity

Enjoy reading new work

RSCPublishing

Peer Review Survey 2009

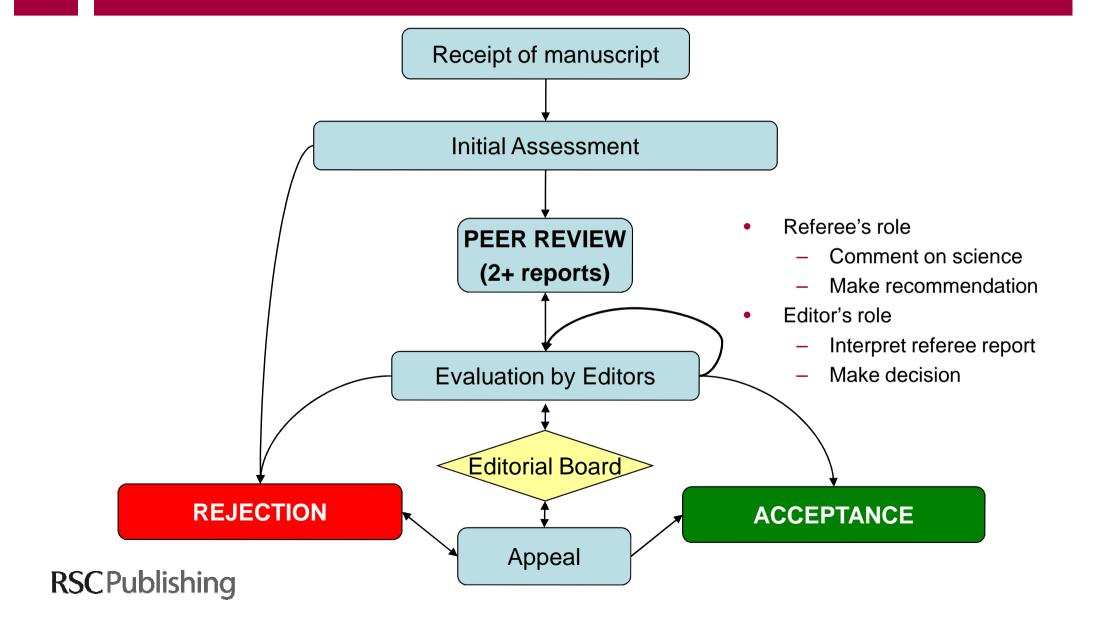
- Largest ever international survey of authors and reviewers (over 4000), carried out by UK charity Sense About Science (<u>www.senseaboutscience.org.uk</u>)
 - Almost all researchers (91%) believe that their last paper was improved as a result of peer review
- 79% of researchers think that peer review should:
 - identify the best papers
 - determine their originality and importance
 - improve those papers
 - determine whether research is plagiarised or fraudulent

Peer Review

Peer review is what makes science scientific. Although no human system can ever be perfect, peer review is the best system we have for ensuring the reliability of scientific findings >>>

Dr Ted Nield, The Geological Society of London

Peer Review Process



Peer Review Models

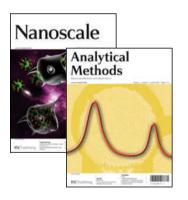
 In-house professional editorial staff handling manuscripts



 A hybrid system combining both of the above











Peer Review Explained

- Referee selection considerations
 - Specialist subject knowledge
 - Conflicts of interest
 - Speed / reliability / accuracy

- Questions for referees
 - Correctness of experimental work
 - Novelty and impact of work
 - Suitability for publication in the journal

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Where to submit?

- 12751 indexed peer-reviewed Scientific Journals
- 476 Chemistry
- 114 Physical Chemistry

Source: www.scimagojr.com

Where to submit?

- Target audience (previous publications)
- Impact of work and journal
- Prior experience / habit
- Journal policies / article types
- Publication speeds
- Commercial considerations
- Be realistic

Publishing Metrics

and L. S. Cederbaum, Chem. Rev., 2002, 102, 181. D. Schröder, Angew. Chem., Int. Ed., 2004, 43, 1329. ... Schwartz, J. Phys. Chem. A, 1999, 103, 7385. Ehrler, F. Furche, J. M. Weber and M. A. ous, Acc. Chem. Res., 1996, science, 7 S. D. Price, Phys. Chem. Chem. Phys., 2003, 5, 1717. Phys., 2005, 122, 94321. 41 O. T. Ehrler, J. M. Weber, F. Furche and M. S. G. Cox, A. D. J. Critchley, P. S. Kreynin, I. R. McNab, R. C. Shiell and F. E. Smith, Phys. Chem. Chem. Phys., 2003, 5, 663. 42 X. B. Wang and L. S. Wang, Phys. Rev. Lett., 1. J. B. Fenn, M. Mann, C. K. Meng, S. F. Wong and C. M. 43 D. Loffler, J. M. Weber and M. M. Kappes, J. Ch V. E. Boxford and C. E. H. Dessent, J. Phys. Chem. A, 2005, 109, 44 A. Dreuw and L. S. Cederbaum, Phys. Rev. A, 200 45 X. B. Wang and L. S. Wang, J. Chem. Phys., 1999, E. H. Dessent and C. Rigby, Chem. A. 2005, 109, 2005, 46 S. A. McLuckey and D. E. Goeringer, J. Mass Spectr 53 A. B. Nielsen, P. Hvelplund, B. Liu, S. Brøndsted Nielsen at androva, A. I. Boldyrev, H. J. Zhai and L. S. Wang, J. 54 K. Drenck, P. Hvelplund, C. J. McKenzie and S. Brønde osch, D. I. Will, C. Cooper, B. Henry and J. F. Liang, 55 G. Bojesen, P. Hvelplund, T. J. D. Jørgensen and S. Brøndst M. Krishnamurthy, Phys. Rev. A, 2003, 67, 23201. 56 K. W. M. Siu, G. J. Gardner and S. S. Rarman O. L. S. Cederbaum, J. Chem. Phys., 1999, 111, 1467. 1 RCB(outer) are used to refer to the magnitude 57 S. M. Bachrach, M. Hare and S. D. V. 58 W. E. Boxford

Impact Factors

- A metric for each journal published every year by ISI
- A measure of how frequently the "average" article in a journal is cited in the two calendar years after publication

Example: Lab on a Chip's latest (2009) Impact Factor is calculated as:

Number of citations in 2009 (in all journals) to any article published in *Lab on a Chip* in 2007+2008



2792

Number of articles published in Lab on a Chip in 2007+2008

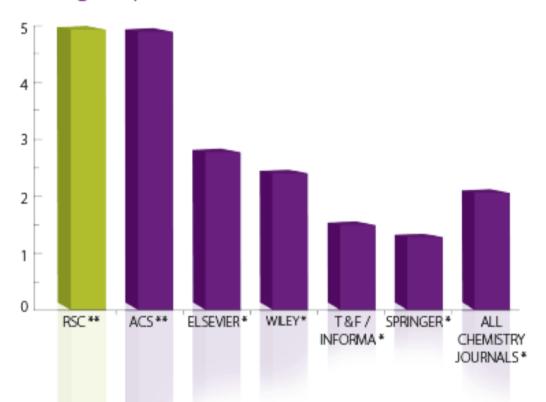


190+241

2792 / 431 = 6.478

Impact Factors: Well publicised...

Average Impact Factors



At 4.9, our average impact factor leads the way in chemistry publishing.

Impact Factors: Strong emotions

...[Impact Factors] create an antiscientific culture in which pushiness and political skills are rewarded too much, and imaginative approaches, high-quality results and logical argument, too little...

Peter Lawrence, Laboratory of Molecular Biology, Cambridge

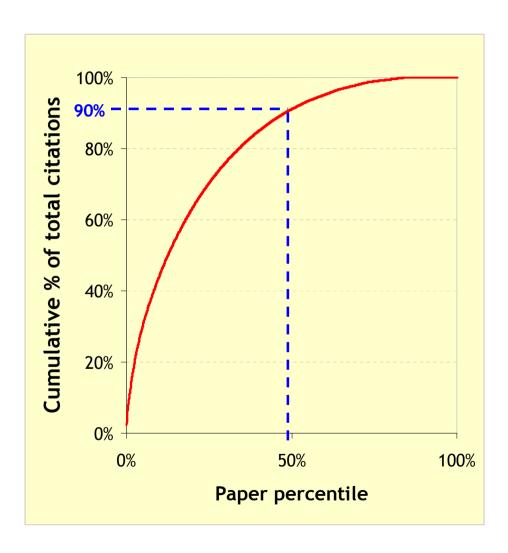
...the wretched impact factor...is not appropriate for ranking individuals...astonishingly this is not known (or ignored) by some selection committees.

David Colquhoun, UCL

Problems with Impact Factors

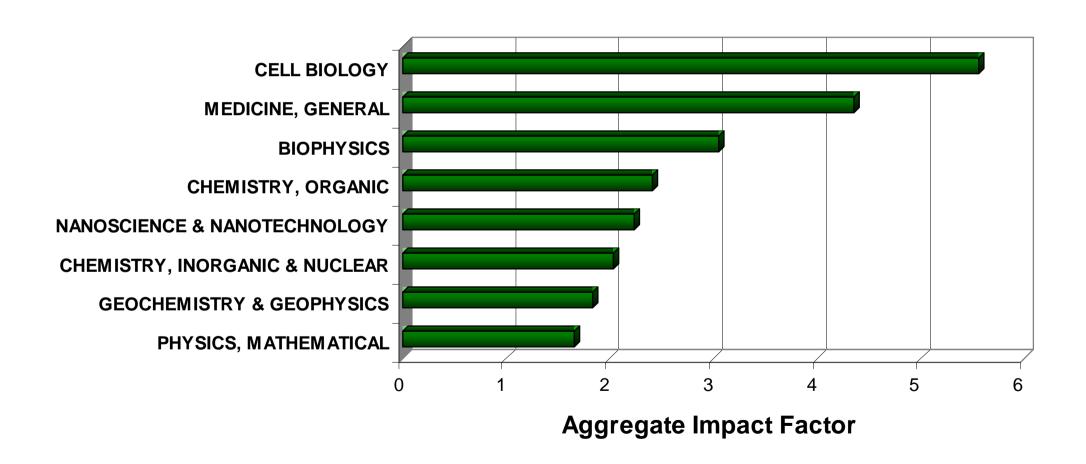
- Error in calculation (~5%)
- Averaging problems
- Can be manipulated
- Are subject-specific
- 'Fashionable' work is more highly cited
- 'Bad' science is well cited!

Averaging problems



 Half of all Nature articles published in 2009 have drawn 90% of the total citations (to date)

Subject specific



Subject specific

Journal	Impact Factor	Articles Published			
CA: A Cancer Journal for Clinicians	74.575	40			
Acta Crystallographica A	49.926	251			
The New England Journal of Medicine	49.017	356			
Annual Review of Immunology	41.059	24			
Nature Reviews Molecular Cell Biology	35.423	84			
Physiological Reviews	35.000	40			
Reviews of Modern Physics	33.985	36			
Journal of the American Medical Assoc	31.718	225			
Nature	31.343	899			
Cell	31.253	348			
Nature Reviews Cancer	30.762	80			

Problems with Impact Factors

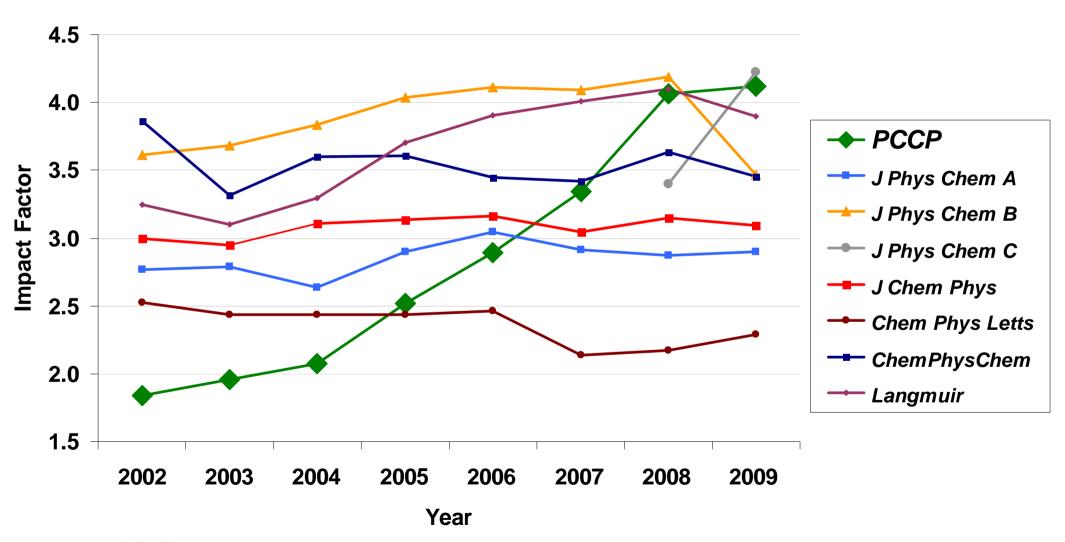
...a journal's Impact Factor says nothing at all about how well read and discussed the journal is...the Impact Factor is a poor measure of overall impact... ??



Editors, PLoS Medicine

DOI: 10.1371/journal.pmed.0030291

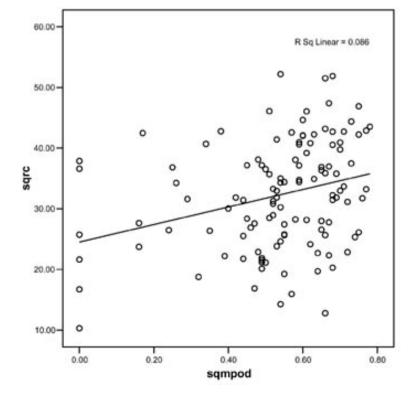
Trends in physical chemistry Impact Factors



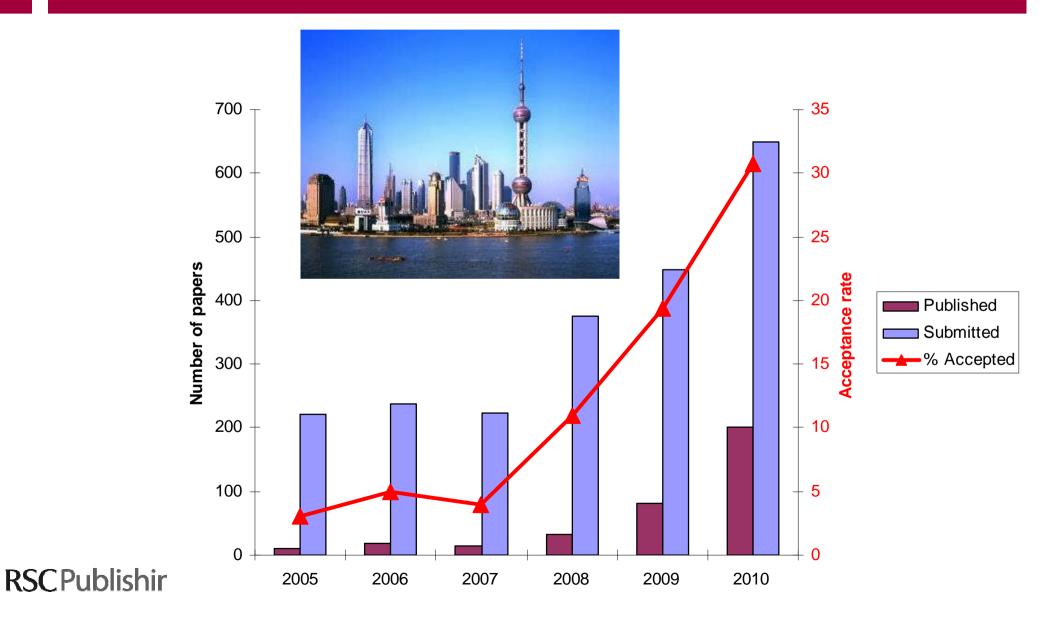
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Impact Factors

 Citation analysis can provide interesting information, but this should not be overinterpreted



China and PCCP

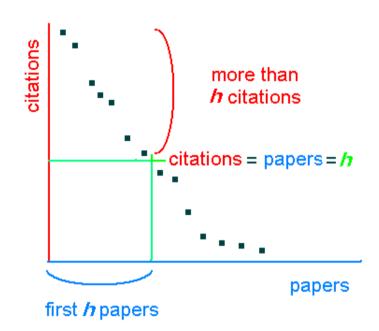


Hirsch Index

 A scientist with an index of h has published h papers with at least h citations each

Hirsch Index – Worked Example

- Order a list of papers by the total citations received (e.g. on ISI-WoS or Scopus)
- Find the highest number of papers where the citations received are greater than the rank:



Paper rank	1	2	3	 21	22	23	 78	79	80
Citations to date	72	63	59	 24	24	21	 0	0	0

$$\rightarrow$$
 h = 22

Outline

- Who am I?
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Getting published

- Explain, don't assume
- Be honest
- Create a good impression

Components of a Submission

Cover letter / justification

- Briefly and clearly put work in context
- Don't oversell or undersell
- Highlight relevance for the journal you are submitting to
- Mention any special circumstances (why submitting, special issues, relations to recent or parallel submissions etc)
- Suggested referees (more information is good)
- Also highlight possible conflicts of interest

Writing the Paper

- Adhere to journal specific requirements (layout, format, ESI etc). Author guidelines / templates may be demanding!
 - Length limits
 - Title
 - Authorship
 - Abstract
 - Introduction
 - (Experimental)
 - Results and Discussion
 - Conclusions
 - Acknowledgements
 - References (formatting)

FEATURE ARTICLE

www.rsc.org/chemcomm | ChemComm

Supramolecular assemblies built with host-stabilized charge-transfer interactions

Young Ho Ko, Eunju Kim, Ilha Hwang and Kimoon Kim*

Received (in Cambridge, UK) 17th October 2006, Accepted 10th November 2006 First published as an Advance Article on the web 12th December 2006 DOI: 10.1039/b615103e

Host-stabilized charge-transfer (CT) interactions and supramolecular assemblies lost with with these interactions are described. A variety of appramolecular assemblies including polyrotxames, molecular necklaces, and rotxame dendrimers were synthesize uthrough the intramolecular or intermolecular necklaces, and rotxame dendrimers were synthesize uthrough the intramolecular or intermolecular necklaces, and rotxame dendrimers were synthesized through the intramolecular or intermolecular box stabilized CT — molecules having both electron-denor and electron-acceptor units connected by various types of linkers. Applications, including the design and synthesis of redox-driven molecular machine, the armount of the contraction of the

1. Introductio

The charge-transfer (CT) interactions or donor-acceptor interactions between respensa are an important class of non-covalent interactions and have been greatly exploited in the design and synthesis of self-organizing systems. In particular, the interactions between electron-deficient 4.4° hipyridinium derivatives and electron-rich aromatics have been extensively used to build mechanically interlocked molecules such as rotoxanses and cateranes,² which later led to elegant studies of molecular machines and switches. Electron-circh terratinalizate derivatives have also been incorporated into elaborate molecular systems acting as sensors or molecular switches by virtue of their ability to form CT complexes with a variety of z-electron acceptors. The organization of alternating electron-rich and electron-officient units has also been employed to create novel macromolecules with folded structures.²⁵ and discost lequid crystallium materials.³⁶

National Creative Research Initiative Center for Smart Supramolecules and Department of Chemistry, Pohang University of Science and Technology, Sain 31 Hyoladora, Pohang 190-768, Republic of Kora. E-mail: kikin@posteck.ac.kr. Fax: +82-54-279-8129; Tel:+82-54-279-2113 Although formation of stable CT complexes in the pores of zeolites had been reported, "there was no report on stable CT complex formation in a molecular host until 2001, when we reported the first example of selective inclusion of an electron-donor and -acceptor pair in cucurbit[8]uril, driven by the strong CT interaction between the guests." The host-stabilized CT complex formation is an interesting phenomenon in its own right but, more importantly, it offers new opportunities to construct supramolecular assemblies. Indeed, for the last several years, we and others reported a wide variety of supramolecular assemblies and as molecular necklaces, molecular loop locks, and redox controllable vesicles, based on this chemistry. This feature article focuses on supramolecular assemblies built with the host-stabilized CT interactions primarily based on our own work.

2. Host-stabilized charge-transfer interactions

2.1. Cucurbit[n]uril

The host family cucurbit[n]uril (CB[n], n = 5-10), comprising n glycoluril units, $^{8-10}$ have a hydrophobic cavity and two



Young Ho Ko

Young Ho Ko graduated from Konkuk University with a BS degree in 1990, and received his MS and PhD degrees from Pohang University of Science and Technology in NMR spectroscopy under Professor Hee Chron Lee in 1992 and 1998, respectively. After three-years of postductoral work at the Center for Blofunctional Modecales, be indeed the group current research interests encompass MRR spectroscopy of supramolecular systems and host-guest chemistry.



Eunju Kim

Eanju Kim graduated from Chornam National University with a BS degree in 2002, and received her MS degree from Pohang University of Science and Technology (POSTECH) in 2005. She is currently a PhD Student at POSTECH under the supervision of Professor Kunoon Kim. Her research focuses on polymer nanoengules and six muli-responsive polymeric materials.

Chem. Commun, 2007, 1305-1315 | 1305

Writing the Paper

- Consider your audience for general journals, and define acronyms
- Keep the language simple, avoiding idioms and long complex paragraphs
- Use a spell and grammar check
- Proof read carefully before submission

Ethical Publishing Practice

- Read and follow Ethical Guidelines
- Avoid plagiarism and fraudulent claims ("keep it real!")
- Avoid selective referencing
- Avoid pejorative words and insulting language
- Avoid duplicate submissions and fragmentation
 - Provide in press, submitted or in preparation papers
- Disclose all relevant information
 - Scientific
 - Funding
 - Rule of thumb: "embarrassment test"
- Authorship
 - All authors must have meaningfully contributed
 - All authors must be aware of submission



Revising a Paper

- Letter to Editor
 - Polite response to referees: keep in mind the referees may be sent your response
 - Address all comments modify manuscript or refute points accordingly. Provide references if appropriate
 - Provide an itemised list of changes
 - Two way process Editors and Referees are (usually) reasonable people

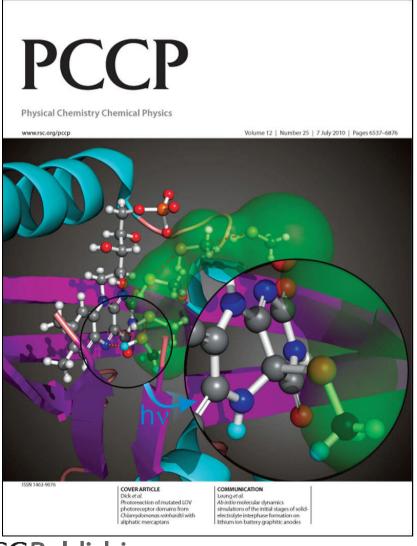
An Imperfect Process



Publishing Top Tips

- Explain all relevant information in a cover letter
- Read and follow Author and Ethical Guidelines
- Perform thorough literature search
- 'Sell' your work to the Editor & Referees
- Be clear and concise
- Consider your audience e.g. use of technical words and abbreviations
- Proof read before submission
- Put yourself in the Referees' and Editors' shoes (or the Authors' shoes if writing a referee report)

Physical Chemistry Chemical Physics (PCCP)



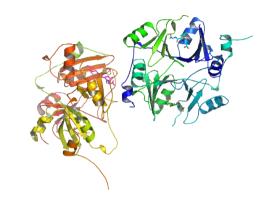
- Highest quality research and high Impact Factor – 4.12
- RSC's biggest journal: >15000 pages in 2010 (48 issues)
- Broad international readership across physical science
- Rigorous, fair, and very efficient manuscript handling
- Co-owned by 16 National Societies
- World class Editorial Board
- Free colour

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www.rsc.org/pccp

What does PCCP publish?

Important physical insight



66

What causes molecules / materials to have the properties they do? 🤊 🤊

Lots of sub-communities

Surfaces / Catalysis
 Nanoscience
 Spectroscopy

Kinetics & Dynamics Biophysical Electrochemistry

Materials
 Theoretical
 Charge transfer

PCCP does not publish **purely** synthetic work

2010 Editorial Board Members

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2010 PCCP Biophysics Series

 A series of 5 themed issues published through the year, highlighting cutting-edge biophysical research:



• Biomolecular structures: from isolated molecules to living cells Issue 14, 2010 (*Phys. Chem. Chem. Phys.*, 2010, 12, 3317-3632) covers recent advances in physical chemistry of biomolecules and biomolecular systems from the perspectives of molecular structure.

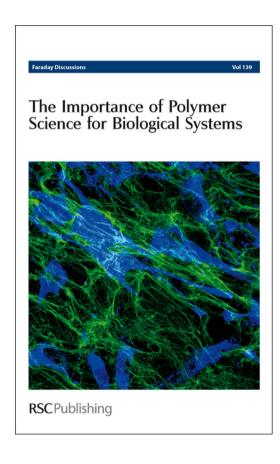


Molecular mechanisms of the photostability of life
Issue 19, 2010 (Phys. Chem. Chem. Phys., 2010, 12, 4881-5172)
contains a collection of articles in this topical and active research field

COMING SOON...

- Water in Biological Systems
- Advances in Mass Spectrometry for Biological Science
- Homochirality and Origin of Life

Physical Chemistry Journals – Faraday Discussions



- 6 Discussion meetings a year: each on a single topic
- Unique format
- Impact factor
- www.rsc.org/faraday

What is a Faraday Discussion?

 A RSC-organised meeting on a particular topic where 24 papers are presented and discussed

 Papers are circulated to participants in advance, so most of the meeting is devoted to discussion

 Papers and discussion are published online, and printed together in a volume

Faraday Discussion meetings

Year	Vol	Title
2010	146	Wetting Dynamics of Structured Surfaces
	147	Chemistry of the Planets
	148	Inorganic Biochemistry
	149	Analysis for Healthcare Diagnostics and Theranostics
2011	150	Frontiers in Spectroscopy
	151	Hydrogen Storage Materials Artificial Photosynthesis
	152	Gold
	153	Coherence and Control in Chemistry
	154	Ionic Liquids
	155	Artificial Photosynthesis

Energy & Environmental Science – launched July 2008



- Publishing high impact, high quality science from top international groups
- A community-spanning journal bringing researchers together
- First Official Impact Factor just announced – 8.50
- Linking energy conversion and storage, alternative fuel technologies and global environmental science
- Professor Nathan Lewis (Caltech)
 Editorial Board Chair

Why a new journal?

- Huge research activity around the world
- Need collaborative research (science, technology, engineering) in many energy fields
- A top-tier journal to bring communities together



RSCPublishing

Scope

- Solar energy conversion
- Fuel cells, Supercapacitors, Batteries
- Hydrogen production and storage
- Clean coal and fossil fuels
- Materials and nanotechnology for energy systems
- Carbon capture and storage
- Photocatalysis & environmental catalysis
- Biofuels
- Global atmospheric chemistry & climate change
- New energy systems, networks and technologies

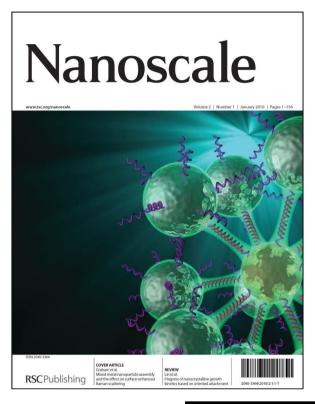
Energy & Environmental Science

Ranked #1 of 181 journals in its ISI JCR subject category



Nanoscale Launched October 2009

The best science of the small world in a great new journal!



- A new high-impact journal spanning nanoscience and nanotechnology
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 - Prof Markus Niederberger (ETH Zurich)
 - Prof Francesco Stellacci (MIT)
 - Prof Jianfang Wang (Hong Kong)



RSCPublishing

www.rsc.org/nanoscale

Recently Published in Nanoscale

Mechanised nanoparticles for drug delivery

J. Fraser Stoddart et al, Nanoscale, 2009, 1, 16

DOI: 10.1039/b9nr00162j

Electrospun nanofibers for neural tissue engineering

Younan Xia et al, Nanoscale, 2010, 2, 35

DOI: 10.1039/b9nr00243j

By what means should nanoscaled materials be constructed: molecule, medium, or human?

Katsuhiko Ariga et al, Nanoscale, 2010, 2, 198

DOI: <u>10.1039/b9nr00105k</u>

LbL multilayer capsules: recent progress and future outlook for their use in life sciences

Carsten Sönnichsen et al, *Nanoscale*, 2010, **2**, 458, **DOI**: 10.1039/b9nr00341j

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Recently Published in Nanoscale

Nanoscale optical imaging by atomic force infrared microscopy

James H. Rice, *Nanoscale*, 2010, **2**, 660

DOI: 10.1039/b9nr00279k

Surface plasmon resonance of gold nanoparticles assemblies at liquid | liquid interfaces

Hubert H. Girault et al, Nanoscale, 2010

DOI: <u>10.1039/c0nr00241k</u>

Formation Mechanism of Uniform Nanocrystals using Hot-injection and Heat-up Methods

Taeghwan Hyeon et al, Nanoscale, 2010

Supporting the community we serve

- Disseminating great science is our prime motivation
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- Sponsorship and liaising with conferences we cannot attend



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- www.rsc.org

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 - www.rsc.org/ees
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