

**Computational Engineering News**  
**An occasional newsletter of**  
**INTERNATIONAL CENTRE FOR COMPUTATIONAL ENGINEERING**  
**(IC<sup>2</sup>E), Rhodes, Greece**

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***Peer review or expert review?***

Publication in peer reviewed international and national journals, as well as conference proceedings, has been a measure of esteem of academics in all disciplines including science and engineering. Amongst a number of other factors, including the amount of money brought to the academic Institution, it governs the academic's promotion/tenure, awards and rewards including salary. Editors of Journals and conference proceedings, who are generally academics themselves have the task of getting the submitted research reviewed promptly by several peers and take a decision whether the research is publishable.

The word 'peer', according to the English dictionary means 'an equal in civil standing'. The question then arises as to who qualifies as a peer for a scholarly work? It is generally understood in the editorial fraternity that any one who has published a paper on the same or a related topic qualifies to be a 'peer reviewer'. This system works well in most disciplines especially in the fields of humanities, social sciences and medicine. The reason for this is that in most situations researchers may have differing opinions and generally there is no quantitative known correct solution. However, the use of the so called peer review system in many areas of the engineering sciences is fraught with considerable risks of propagating erroneous research results. With the ever increasing pressures on researchers to publish or perish, a fundamental error in a publication can be overlooked with the result that the same error gets entrenched within the discipline and within the peer group. New theories or methodologies are propounded based on

incorrect premises. This, evidently, leads to major losses in terms of human resources and finance which generally comes from public funds.

Publishers of scholarly Journals constantly push Editors towards an ever increasing rate of submissions, faster decision making process and eventually peer reviewers at the expense of quality, accuracy and relevance of research published. Indeed, no publisher would ever admit to this tactics but should they? They are all at it together in the sole pursuit of financial gains. Electronic submission technology facilitates this environment of sub-standard and dubious research by creating ever increasing number of peer reviewers and the downward spiral continues.

But who ultimately pays for all this? For any misdemeanours committed by any group of professionals, be it bankers, scientists, doctors or engineers, ultimately it is the tax payer who foots the bill. Published scholarly research, like fashion and political correctness spreads from one country to the other albeit with some time lag but causing more duplication, sub-standard research and waste of time and money.

Freedom of speech is a fundamental human right but does it mean that any research which may be fundamentally incorrect, lacking in truth and objectivity should be published through the peer reviewer system?

Your views on this topic are welcome.

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## ***Impact of the peer review system on research student cohort***

One of the serious implications of the peer review model, as discussed above by Gyan, is that a large number of young academics and students get sucked into research areas and topics which follow an 'established' trend, or a line of thought. The race to publish leads to theories or hypotheses that are not thought out; they lack the attention to detail and, at times, even the basic understanding. The peer review system of the research councils in most countries, not surprisingly, is also such that popular lines of research get funded abundantly whilst challenging, pioneering and ground breaking research has no chance whatsoever. The peer review system just wouldn't allow it.

Scientific or technical research is sometimes driven by research tools and equipment available for investigation at any time. For example, a device or sensor having a higher resolution/magnification or diagnostic tool (this word is used in a broad sense and not necessarily related to medicine) based on a new/different principle will trigger scores of applications to the research councils. Whilst enthusiastic students and academics will toil to publish, the manufacturer will usually take little or no responsibility of its range of applicability or accuracy. Similarly, research is also frequently driven by the availability of a piece of new computer software which may be used by thousands of researchers. Here again, the developer may not take any responsibility for the accuracy or conclusions reached by the investigator using their equipment or software. What if the device/ equipment/ software used by them has serious deficiencies?

In both situations described above, the peer review system of grant applications engages groups of researchers using the same methodology, equipment or software without appreciating or indeed revealing it's weaknesses as they may have gone too far down the line in their research to retreat. Thus, due to peer review system, such deficiencies may not get revealed for many years. By then colossal waste of resources would have taken place. Commercial interest of manufacturers or the software companies also promotes formation of User Groups, further masking transparency and true evaluation of research output.

Research students, on the other hand, having spent a great deal of time on untested methodologies, techniques and software, lose sight of basics and are ill-prepared for challenges of changes in industry. They have little respect for academic research and can reach high positions with inadequate or poor understanding of the basic science and technology.

It is not the number of PhD's produced by a university or a country but their quality that is of primary importance.

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## **Coming Soon GEOMECHANICS RESEARCH BULLETIN – An expert reviewed e-Journal**

Demonstration of scholarship, high quality, scientific rigour, clarity and usefulness of research are the prime criteria and *raison d'etre* for publication of scientific and technical research. And once it is published, it should be made available to all

nationally (since the public paid for it) and internationally (as a gesture of goodwill and in order to prevent unnecessary duplication). Unfortunately, the current system of publication of research funded from the tax payers' pocket is not satisfactory on both of these two counts. If money is to be made, commercial Publishers will launch more Journals, existing ones will add more pages and academics will have no option but to publish to please research councils and keep their jobs. Of course, the system cannot be changed overnight but IC<sup>2</sup>E is proposing to take the first step in this direction to launch an expert reviewed e-Journal which will be run by the researchers for the researchers and in the interest of global research community of academics, engineers, students and public at large.

### **How will it work?**

Unlike other commercial Journals, the author(s) and/or sponsor(s) of the research will hold the copyright of their work. Consequently, they will not face the indignity of seeking permission from the publisher to use and quote their own research - a system that has been detested by most researchers and has bewildered many research funding agencies. The proposed e-Journal will have two sections. Authors will be allowed to upload their work in Section B. To avoid frivolous submissions the authors will be required to pay a sum of Euro 100 or equivalent. This sum will be used for the payment of honoraria to expert reviewers. The abstract of the papers submitted will be visible to all who visit the site (after registration). The names of experts on the review panel, including their area of expertise, will also be shown on the website. Therefore, it will not be an

anonymous 'peer' reviewer but by an established expert. In most cases, the expert reviewer will not be some one who himself or herself is competing to publish a paper. Expert reviewers will be persons who are on the top of their career and are not seeking further advancement by virtue of more number of publications. They will be impartial and have no axe to grind.

After revisions, once the paper has been finally approved, it will move to Section A. Now an extended abstract of the revised and approved paper will be visible to all. Any one will be able to download the papers for a nominal sum of Euro 10. Author(s) will receive the monies obtained from downloads, after administration cost are covered.

No system is perfect and we do not expect the one proposed by us to be so. However, with the active co-operation of the global community of research students, distinguished researchers /authors, recognised expert reviewers and experienced editors, IC<sup>2</sup>E proposes to make **Geomechanics Research Bulletin (GRB)**, the most prestigious Journal in the field of mechanics of geomaterials (soils, rocks, concrete, masonry, etc.), geotechnical engineering and its applications in various fields of civil, mining, off-shore, nuclear and petroleum engineering. The published research will be truly widely disseminated world-wide, being made available at the point of use at affordable prices.

Pursuing the philosophy of accuracy, quality and usefulness of scientific and technical content, Geomechanics Research Bulletin would also publish independent expert reviews of articles appearing in leading geotechnical journals. Each individual issue will be scrutinized by a number

of experts, covering different areas, and their comments will be published in GRB. The primary objective will be to identify the contributions, which may be viewed as significant in the respective research areas. The e-Journal will also publish state-of-the-art articles by leading experts.

We would like to invite you to give us your comments on any of the above issues. If you have any specific suggestions please do let us know; it will be very much appreciated.

**Gyan Pande & Stan Pietruszczak**

***Invitation to participate in the  
Second International Symposium  
on Computational Geomechanics  
(ComGeo II)***

The above Symposium covering the latest advances in Computational Geomechanics will be held at Dubrovnik, Croatia, 27 – 29 April 2011. For further information, please visit <http://www.comgeo.org>

***Fundamentals of Plasticity in  
Geomechanics***

The above book written by Stan Pietruszczak, McMaster University, Canada, published recently by CRC press is now available for downloading on the IC2E website at <http://www.ic2e.org>. If you need to read only selected chapters, then downloading will be a cheaper option than buying a hard copy.

***Registration for online course open***

Are you a user of geotechnical Finite Element packages? Have you learnt FE analysis from Users' Manuals? *Are you confused as to which material model to use?*

***Do you feel like a taxi driver, who knows little about how his/her car***

***works? Are you intellectually hungry?***

If answer to any of the above question is 'yes' then register for an online IC<sup>2</sup>E short course/seminar on **Constitutive models for Geomaterials**

Lecturers:

Poul V Lade, Catholic University of America, Washington DC, USA  
Gyan Pande, Swansea University, UK  
Stan Pietruszczak, McMaster University, Hamilton, Canada

**For registration email:**  
[s.drakos@ic2e.org](mailto:s.drakos@ic2e.org)

***Down the memory lane***

Did you ever attend a NUMOG? This series of International Symposia named 'Numerical Models in Geomechanics' were held at Zurich, Switzerland (1982); Ghent, Belgium (1986); Niagara Falls, Canada (1989); Swansea, UK (1992); Davos, Switzerland (1995); Montreal, Canada (1997); Graz, Austria (1999); Rome, Italy (2002), Ottawa, Canada (2004) and finally in Rhodes, Greece, in 2007. The symposia were well known for high quality of technical content, informal atmosphere and enjoyable social programmes. If you attended any of these Symposia and have pictures of friends and colleagues which you would like to share, please send them to me ([geeta@ic2e.org](mailto:geeta@ic2e.org)). These will be linked to a special site on the Facebook.

And if you attended ComGeo I, (in Nice, France) and got the flavour of NUMOGs, you too are welcome to send your pictures. Hope to see you soon.

Regards

**Geeta Pande**