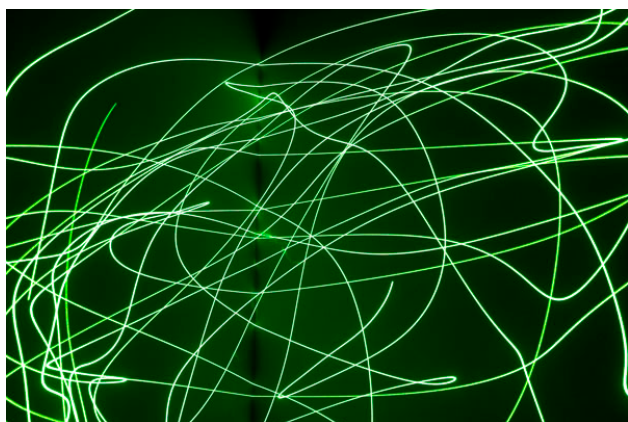


## Digital laser research: a "game changer", if you can access it

I followed the news with great excitement this week when the [Council for Scientific and Industrial Research \(CSIR\)](#) unveiled a remarkable advancement – a digital laser! This development has been hailed as a "game-changer" that will have applications and impact many fields. (I won't be delving into the digital laser and how it functions here, but the [Mail and Guardian's article](#) on the announcement gives a nice short overview of what the laser is and its huge potential). In short, in terms of science and innovation, the research into the digital laser has paid off and it represents a big win for South Africa.

The findings of this research were [published in the 2 August edition of Nature Communications](#). And here is where my excitement was dampened – "Read the full article", the site exclaims, "Purchase article full text and PDF: \$32". Here I am, trying to access the article from within one of the top universities in South Africa, and I don't have access.... This lack of access to cutting edge research produced in our own country by an organisation that receives government funding raises red flags for me.



There is a major disconnect when the publication of a discovery so big that our Minister of Science and Technology, Derek Hanekom, described as one that "opens a whole new world of opportunity", cannot be read by researchers at university institutions in the country in which it was made. Is publishing in a high impact factor publication so important that the fact that the published product is inaccessible to a large proportion of people is considered inconsequential?

But all, it turns out, is not lost. Via Twitter (often my first go-to for news, views and information), I discovered that there is in fact an [eprint covering this research on arXiv](#). [ArXiv](#) is an online scientific paper archive for preprints (known as eprints) from mathematics, physics, astronomy, computer science, quantitative biology, statistics and quantitative finance. In these fields, sharing preprints of research articles is largely part of the normal research process. And while these preprints are not peer-reviewed, the arXiv gives researchers access to the papers' core findings that would often otherwise remain inaccessible to them.

However, in many other research areas, the culture of sharing is not the status quo. This leaves many papers locked away behind their price tags and me wondering....: If published research is not accessible to other researchers, due to a hefty price tag on the published output, was there any point in undertaking that research to begin with? Is academia, which should be about research, education and scholarship, not supposed to share the knowledge that it generates?

"That the world's first digital laser should come from our country is testimony to the calibre of scientists that South Africa has," Minister Hanekom was quoted as saying. I would like to see a South Africa which also bears testimony to the fact that our research publications are freely and openly accessible online, allowing other researchers to build on the findings.

("Laser fun" image by [dcJohn](#) available from [Flickr](#) under a [CC-BY license](#))

by SarahG



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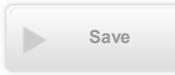
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