Show instruments some love

Progress in research would be impossible without state-of-the art instruments, but their contributions are often underappreciated.

Never change a running system — goes a popular mantra in research. However, before an experimental setup can be left largely untouched, it needs to be assembled. And it will run happily with basic maintenance only if its components are just right. Today, lasers and optical elements, electronics and cryostats as well as a host of other specialist equipment can be bought from your lab supplier of choice. As exciting as a new purchase arriving at the lab can be, these 'store-bought' components are often taken for granted, even though high-quality instruments are all-important to research, driving scientific discovery.

From the outside, most physics instruments are fairly unremarkable boxes with subdued colour schemes. But opening the lid — provided that's even an option — reveals a level of complexity that is only made possible by modern precision-engineering. For example, a state-of-the art laser system hides the contents of an entire optical bench, designed to guarantee long-term stability by using the latest techniques, which is why this particular type of box should only be opened in a clean room.

The degree of stability, precision and control this provides is the result of decades of development that requires a dedicated team and would not be possible as a side-project in a research group. As such, it is a blessing for the scientific community that the legwork behind the development of these indispensable devices can be outsourced to instrumentation companies, willing to invest the time and the money. In fact, many of the big names in the business started off as spin-outs from universities or other research institutions and they continue to employ many a physics graduate, continuing the link with their academic roots.

Every experimentalist is aware how much they depend on the instruments in their lab, and not only from the memory of that devastating time when one broke down and they had to wait for it to be fixed. But while chasing the joy of an exciting physical result, it's too easy to forget that these experiments would not be possible without an industry supplying ever more sophisticated equipment. So, let's all take a moment to appreciate the instruments we use — even if they are inconspicuous boxes in a corner of the lab — and the people who make them. ❐

Published online: 13 May 2022
https://doi.org/10.1038/s41567-022-01622-y

A farewell to Letters

As conventions in scholarly publishing evolve, it is appropriate to reassess the options that we provide to our authors. In this spirit, *Nature Physics* will soon stop accepting submissions in our Letter format.

Letters written between individual researchers used to be a mainstay of scholarly communication, and there are famous examples from Charles Darwin, Albert Einstein and many others. As journals became the primary means for scientists to showcase their work, these letters were instead sent to the editors for publication, and this grew into a premier forum for short texts that highlighted a significant result. Often a longer follow-up paper would then provide more details. At *Nature Physics*, we have inherited this distinction between different forms of paper, and it manifests in our two article types for primary research: the Article and the Letter. However, at the end of May, we shall stop accepting new submissions of Letters.

By way of commemoration, let's look back on some of our favourite pieces of research that have been published as Letters in our pages. They include an explanation of LIGO's impressive sensitivity[1], the first observation of PT symmetry breaking in an optical system[2], a discovery of how physical forces drive cell migration[3], and the first observation of interesting band structure features in twisted graphene layers[4]. All are clearly ground-breaking.

There is no single compelling reason for why we choose to make this change — more of a collection of smaller motivations that suggest now is the right time. The most obvious is that the distinction has become somewhat outdated, in that it is rare for researchers to write a short paper that highlights a result followed by a more detailed text for specialists. Indeed, our editorial standards for the two formats have been identical for some time, making the distinction somewhat arbitrary.

Then there is the fact that the formatting differences between the two are confusing and arguably unnecessary at a time when the vast majority of scientific research is read online, rather than in print.

Finally, the majority of our sister journals — including *Nature* and *Nature Communications* — only publish Articles, so it will be more convenient for authors transferring their manuscript between different journals to have a single article type.

Therefore, from the beginning of June, we will have only one article type for primary research: the Article. The maximum recommended length is 3,000 words, six figures (plus ten Extended Data figures), and 50 references. But that is not to say that we expect all papers to be this long: brevity is valuable in scientific writing, and so if you can make your point clearly in fewer words and fewer figures, we strongly recommend that you do. And the transition will be gradual; any Letters that are submitted before June and are still going through the editorial process can remain in that format.

So, it is farewell to Letters, and hello to a more streamlined process here at *Nature Physics*. ❐

Published online: 13 May 2022
https://doi.org/10.1038/s41567-022-01621-z

References

1. The LIGO Scientific Collaboration. *Nat. Phys.* **7**, 962–965 (2011).
2. Rüter, C. et al. *Nat. Phys.* **6**, 192–195 (2010).
3. Trepat, X. et al. *Nat. Phys.* **5**, 426–430 (2009).
4. Li, G. et al. *Nat. Phys.* **6**, 109–113 (2010).