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## Your turn

Since the launch of *The Industrial Physicist*, we have wrestled with one another (sometimes literally) to create an editorial for each issue. In the early days, we felt it was important to explain what we were doing, how we were doing, and where we were going. Now, as we enter our fourth year, we feel that the magazine needs no introduction or explanation. It has become established in so many ways, and has achieved a strong and loyal readership. One of our authors told us this month that all of his company's customers read the magazine. The president of another company told us that a major semiconductor manufacturer ordered more than \$6 million worth of equipment from his company as a result of articles in *The Industrial*

*Physicist*. The Acoustical Society of America just announced that Jennifer Ouellette has won their 1997 Science Writing Award in Acoustics for Journalists for her article "Science and Art Converge in Concert Hall Acoustics" (September 1997). Another reader comments that he especially enjoys the "lively interchange" we have now established in three departments—Letters to the Editor, Hidden Physicists, and Careers: Questions and Answers. Occasionally, we may still feel inspired to write an editorial on a subject of particular interest, but from now on we are more interested in hearing from you. Your magazine has arrived.

Charles Harris, Publisher  
Ken McNaughton, Editor

## SQUIDS

I read your article on SQUIDs ["SQUID Sensors Penetrate New Markets," 6/98, pp. 20-23] with great interest, especially the comment on SQUID microscopy and the soon-to-be-available commercial model. My interest is in integrated circuit applications, and I would appreciate whatever additional information you can provide on the manufacturer and the expected product.

Both this article and "Failure Analysis in a Nanometer World" (6/98, pp. 11-14) were well written and add to the quality of a magazine which is getting to be one that I find

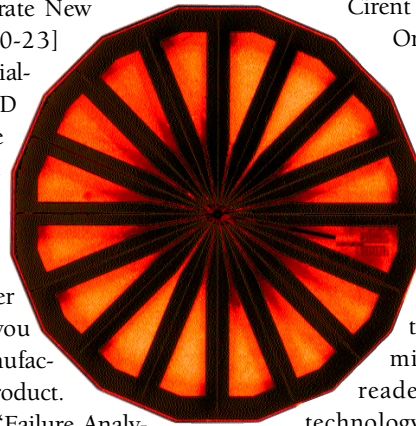
very useful. Keep up the good work!

Jeff Bindell

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## Ion propulsion

I read with great interest your article on ion propulsion for spacecraft ["XIPS Keeps Satellites on Track," 6/98, pp. 24-26] and thought a few additional facts might be of interest to your readers. You mention that this

technology has existed for years, but some readers may infer from subsequent statements that it began in the 1960s. Actually, "electric propulsion" for spacecraft was



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first mentioned in notes by the father of spaceflight himself, Robert Goddard, in a 1906 notebook entry. The concept went beyond the theoretical in 1954, when Ernst Stuhlinger, then of the Army Rocket Center in Huntsville, Alabama, worked out the physics of a practical ion engine. In 1958, Rocketdyne Corp. demonstrated a working ion engine. Stuhlinger was an avid proponent of the technology, and he designed an ion-engined long-range spacecraft, the so-called “atomic spaceship,” with a mission to Mars as its design objective. This was described in detail in a popular book published by Random House in 1958, a book I received as a boy and which led me, particularly because of Stuhlinger’s engine, to pursue a career in physics. For those desiring more detail, Stuhlinger’s 1964 McGraw-Hill book, *Ion Propulsion for Space Flight*, covers the topic in considerable depth.

Thank you for a fine publication; it’s the one journal I read from cover to cover upon its arrival at my desk.

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## Briefs

Here’s one electrical engineer who enjoys your magazine, especially the lively interchange between readers. I noted with amusement a question posed in a survey of physics graduates [“Physics-Business Master’s Degree,” 6/98, p. 17]. When the graduates were asked, “If you were back in school, what would you study in addition to science?”, the responses included engineering and math. Perhaps it’s just me, but I like to imagine that these categories actually are included in science. Of course, we

could argue about computer science ... (it’s a joke—no flames please!).

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## Who are you?

Your editorial [“Who are you?”, 6/98, p. 4] about the needs of industrial physicists being different from those in the academic sector certainly resonates with me. You could easily do a detailed article comparing the two. The personnel movement is not always from academia to industry, nor is it at all easy to distinguish some work done by engineers as opposed to physicists. In my case, I quit my Ph.D. program in physics as it seemed increasingly irrelevant at the time, and I joined a professional engineering association. Obtaining interesting work

with reasonable remuneration and security was important because of the needs of my young family.

I find myself doing a lot of research through patent law, as do many of my academic colleagues. Since U.S. patent law has a huge worldwide effect, I would like to see a review article. As an example, under the old law, say someone went to the trouble and expense of obtaining a U.S. patent and it generated money. If someone else (I believe it had to be an American) could prove that he or she thought of the idea earlier, then that person would have a claim on the patent (and some of the money). This effect reduced the value of the initial effort and redirected money to the intellectual property lawyers and government patent examiners. However, the new law is “first to file” only. Further, money is required up-front if you wish to secure intellectual rights. This discriminates against poor but creative people. If one works on an idea while waiting the 1.5 to 2 years for the patent to be issued, it could be that the patent was filed a day after someone else filed substantially the same idea, and your efforts—time and money—are wasted. This is not a rare event.

The costs of this wasted effort must be born ultimately by society. Are refinements possible to remove this inequity? The new law is also a boon to the lawyers and the government, and I wonder whether the rate of U.S. patent applications went up when it was passed.

C. Jolliffe

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Who are you? You asked this question in your June 1998 issue. It reminded me of the urban legend commencement speech:

“I would like to congratulate you A students. Through your efforts in fundamental research and academic pursuits, you will bring great honors to this university. And you B students will similarly honor us by sending us those well-prepared secondary school students. Finally, a special thanks to

the C students. Your contributions to the university's endowment will go a long way to support our faculty in developing the next generation of A, B, and C students."

We are pushing research into industrial applications. Perhaps some of the purists in the physics community are holding their noses in the air and shouting "engineer." No offense taken here. Those of us who graduated "magna cum lucky" feel proud to bring applications to research. It is synergy that works, not the caste.

Mark G. Koslow  
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I just recently read your June 1998 issue. It was very timely since I had just subscribed on-line. The article that stood out for me was the editorial by Charles Harris entitled "Who are you?" I felt it was referring to me. I think of myself as part of the hidden physicist category because as an R&D scientist in the engineering/development department, I don't fit the mold of a stereotypical physicist—the college professor. In addition, I appreciate the format of *The Industrial Physicist*. It reports the advances and hot topics in the physics community in layman's terms; consequently, one is not bogged down with the jargon of a particular and unfamiliar genre of science. As a subscriber of *Laser Focus World* and *Photonics Spectra*, I find this refreshing.

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## Bits and bytes

As editor of *The Industrial Physicist*, you may be able to adjudicate in an altercation between me as editor of *Datafile Magazine* (a users' group journal) and David Armstrong of the *Christchurch Press*. It's all about using a 'b' or a 'B' to represent a bit and/or using a 'B' or a 'b' for a byte. He has a dictionary of computer terms which says that 'kb' means a kilobyte, and 'kB' means a kilobit—as in kBps for the speed of a modem in kilobits

per second. Consequently, his newspaper articles use these abbreviations. It's a question of usage, of course. To me, as a physicist used to SI units, it seems natural to assign a 'b' to bit and 'B' to the larger byte. I try to be careful in using abbreviations I consider proper in my columns in *Datafile*. Yet David and I should agree in our usage. I have been challenged to find a bigger authority than his authority. Can you help? Does *The Industrial Physicist* have a style manual or a usage on this matter? Do you know whether other editors have ever made a pronouncement or whether there is a standard for this? Your help would be much appreciated.

Carol L. Miles  
Physicist  
Christchurch, New Zealand

[On this matter, *The Industrial Physicist* follows the American Institute of Physics, whose style manual spells out both "bit" and "byte." SI does not deal with this matter since bit and byte are not units but "constructs." Lewis Holmes, Editor of *Computers in Physics*, says that, 'b' is commonly used for bit and 'B' for byte.—Ed.]

## Change of address

Congratulations on a well-crafted, intelligent, and relevant publication. I just filled out a subscription request via your Web site, but what I really wanted to do was just change my address: you probably have two entries for me now.

Paul Picot  
Life Imaging Systems, Inc.  
London, Ontario, Canada  
ppicot@lifeimage.com

[We have since added a change of address form to our Web site, at [www.aip.org/tip](http://www.aip.org/tip).]

## Real world

I am a recent graduate eager to learn about how physics is applied in "the real world"; I believe your magazine will be a great help.

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