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Ion propulsion

A friend sent a recent issue of *The Industrial Physicist* (9/98) that contained a Letter to the Editor on ion propulsion. I was excited—and really touched—when I saw reference to my early work on this subject. The 1954 paper was indeed the first paper on electric propulsion that presented the basic physics of such systems. Now, 45 years later, I still believe very strongly in the practicality of ion propulsion systems for spaceflight. Last fall, the Jet Propulsion Laboratory launched the first deep space mission, DS1, that is propelled by an ion system. The most recent paper that I wrote on electric propulsion, in 1969, describes a manned Mars mission with ion thrusters.

Ernst Stuhlinger
Huntsville, Alabama

Out of the box

Hidden physicists come in more than one category. In addition to physicists who are called something else, you have nonphysicists who are “doing physics.” Today, most of the important problems in industrial research are highly interdisciplinary in nature. It is therefore obvious that many nonphysicists are doing physics and will be readers of *The Industrial Physicist*. In the next century, many nonphysicists will make discoveries that will advance the science of physics, and physicists will make discoveries that advance sciences other than physics. Students should be made aware that in this new age, terms such as physics, chemistry, math, biology, and engineering will ultimately be reduced to political and economic

titles. There is no sense in building walls like the medieval guilds.

Minas Ensanian
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Bad news

I work as a Ph.D. physicist, with a background in condensed matter physics. I find your magazine interesting and informative, and offer a suggestion for a new type of article. You publish many reports and features on new applications of physics that aid society. A classic example—applications to medical care—is heavily covered, for instance, in your August 1999 issue. I am proud of the beneficial aspects to society of the applications of physics. However, I am concerned by what I perceive as negative consequences of at least some applications of advancing technology.

Since I believe that it's better to be aware of possible negative consequences than to ignore them, I recommend that TIP report, from time to time, on less clearly positive, more controversial, or less desirable applications. Without wanting to stir up argument as to the positive or negative consequences of any one area, I think that most people would find some interest in learning about applications in, for example, new weapons or defense-related technologies, new technologies for police or prison departments, new technologies for industrial and/or government surveillance, and so forth.

Neil Zimmerman
Gaithersburg, Maryland



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