Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

Physics Problems Based on Up-to-Date Science and Technology.
LORCAN M. FOLAN, Polytechnic University, VLADIMIR I. TSIFRINOVICH, Polytechnic University — We observe a huge chasm between up-to-date science and undergraduate education. The result of this chasm is that current student interest in undergraduate science is low. Consequently, students who are graduating from college are often unable to take advantage of the many opportunities offered by science and technology. Cutting edge science and technology frequently use the methods learned in undergraduate courses, but up-to-date applications are not normally used as examples or for problems in undergraduate courses. There are many physics problems which contain information about the latest achievements in science and technology. But typically, the level of these problems is too advanced for undergraduates. We created physics problems for undergraduate science and engineering students, which are based on the latest achievements in science and technology. These problems have been successfully used in our courses at the Polytechnic University in New York. We believe that university faculty may suggest such problems in order to provide information about the frontiers of science and technological, demonstrate the importance of undergraduate physics in solving contemporary problems and raise the interest of talented students in science. From the other side, our approach may be considered an indirect way for advertising advanced technologies, which undergraduate students and, even more important, future college graduates could use in their working lives.

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Date submitted: 14 Sep 2006 Electronic form version 1.4