

**In the
Final
Analysis**

**“You’re a mechanic, right? Why don’t you
just build something?”**

— *Child to Tony Stark in Iron Man 3*

I admit it: Like most of the movie-going public, I can’t get enough of films based on comic books. In fact, you can call me a connoisseur of the genre; I’ll even make up a word for it: How about “comicseaste”? (Try to find that on Google!) After Christopher Nolan’s other-worldly-good Batman films, this comicseaste is especially fond of the Iron Man movies. I won’t defend them as high art, but they are a lot of fun, being witty, sprightly told, delightfully acted, and . . . to my unending delight, chock-a-block full of wishes-fulfilled materials science and engineering.

If you are not familiar with the movies, here’s a one-sentence description of the general concept: Rich and brilliant inventor/engineer/tinkerer/playboy/wastrel Tony Stark fabricates the ultimate suit of armor, which is capable of flight, packed with clever weaponry, nearly impregnable, and darn handy in suppressing all manner of common and super villainy. In mastering his technology over the course of the films, Tony has invented a new element, custom-crafted suites of alloys, developed room-temperature fusion, achieved effortless modeling and manufacturing integration, and pushed additive manufacturing to superheroic heights. In honesty, Tony Stark is a one-man personification of goals three, four, and five of the TMS 2015 Strategic Plan.

Tony’s only flaw? He’s not real.

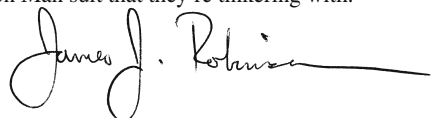
Bummer. That one small caveat aside, however, it is easy to envision the Iron Man films as attracting young people to science, technology, engineering, and mathematics careers. The neat trick of the movies is that while the Iron Man armor is cool, the hero is really the guy in the suit of armor, not the armor itself. As Tony often underscores, “I am Iron Man.” For a young person, this celebration of the mind over matter could be a very empowering and inspiring concept.

The only thing that might be more motivational than the I-wonder-if-that’s-possible idea is the did-they-really-do-that story that leaves you shaking your head in amazement. Take for instance this month’s cover story: “Cold War Thriller Brings Classroom Theory to Life” by Gerhard Fuchs. It tells us how students at the University of Florida conducted their capstone design project around a classified true-life materials failure story centered on the secret CIA salvage of an advanced Soviet nuclear submarine that went missing in 1968. Helping the CIA provide a cover story for the semi-successful/semi-failed operation was the real-life Tony Stark of the 20th century: rich and brilliant inventor/engineer/tinkerer/playboy/wastrel Howard Hughes. Like Iron Man, one would think that this stuff only happens in the movies. In the real world, however, it seems that anything goes.

Personally, I firmly believe in the concept of materials scientist or engineer as a real-life superhero. I realize that every TMS member is not secretly working on an Iron Man suit (. . . or are you?), but I do know that the fantastical is rapidly becoming increasingly commonplace. Evidence? The replicators of *Star Trek* don’t seem that far off in this era of 3D printing and Maker Faires. And, if you look closely, you’ll see Harry Potter’s invisibility cloak coming into view via metamaterials.

To help fire the imaginations of young people with this new normal, the TMS Foundation is supporting development of an exhibition to debut at the Toonseum in Pittsburgh. It is called “Comic-tanium: The Super Materials of the Superheroes,” and it will profile how today’s materials scientists and engineers are the real heroes who are making comic book technologies everyday realities.

After the Pittsburgh debut this Fall, Comic-tanium will next appear at the TMS 2014 Annual Meeting and Exhibition in San Diego. Free registration for anyone who brings the Iron Man suit that they’re tinkering with.



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