NANCY K. FRIEDRICH | Content Director
nancy.friedrich@penton.com

Technology Gives Back

Last month marked the 100th anniversary of the outbreak of World War I. Thanks to advances in surgery, that war saw more injured soldiers return home than any previous conflict. To help these men regain their mobility and potentially return to work in some capacity, research and development was quickly devoted to prosthetics. According to Thomas Schlich, author of "The 'bionic men' of World War I" (www.cnn.com), "Virtually every device produced today to replace lost body function of soldiers returning from our modern wars—as well as accident victims, or victims of criminal acts, such as the Boston Marathon bombings—has its roots in the technological advances that emerged from World War I."

Given the advances in computing, manufacturing, materials, networking, and more since World War I, such a statement is very surprising. Yet it makes sense in that the goal of prosthetics has always been to replace a body part with one that at least partially restores function and/or appearance. With today's technical advances, of course, prosthetic development is moving toward serving as a complete replacement or even an improved enhancement. It is this rapid evolution--combined with the need to help so many returning soldiers—that inspired us to delve into the engineering achievements behind today's cutting-edge prosthetics.

As Penton's Design Engineering & Sourcing Group, our staff of technical experts has researched and covered this topic from a variety of specialized engineering disciplines. The results can be seen in articles, interviews, image galleries, and other multimedia efforts on the *Electronic Design*, *Hydraulics & Pneumatics*, *Microwaves & RF*, and *Machine Design* sites. In each special section, the editors pinpointed and detailed the leading edge in prosthetics development—whether that edge was in wireless networking, sensors, multiprocessing, motors and motor control, or fluid power and hydraulics.

As exciting as these developments are technically, we were especially proud to cover them because you, our engineering audience, have had so much impact on the lives of our returning soldiers. With two wars abroad, many of our men and women are coming home physically injured and with intense mental trauma. If technology can help them restore some of their physical capabilities, the hope is that they may be put on a road to greater healing.

The Design Engineering & Sourcing Group would like to thank all of the researchers, designers, investors, and others that make these latest prosthetic advances possible. In addition to healing our heroes, you are heroes yourselves, given the recovery that you're enabling. Please join me also in thanking our team for their work on this very special project: Bill Wong and Don Tuite, Ken Korane, Stephen Mraz, and Jean-Jacques DeLisle. Don't forget to visit our "Healing Heroes" hub on our websites to see the cross-brand and multimedia coverage of this topic.

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Nancy Friedrich
Executive Director of Content & User Engagement
Electronic Design
Hydraulics & Pneumatics
Machine Design
Microwaves & RF