Gear of the Year

10 Breakthrough Products That Will Change the World P. 72 Tested: Circular Saws

New Cordless Models Are Light and Powerful P. 101 Security Scandal

> Billions Spent and We're Still Not Safe **P. 82**

> > PopularMechanics.com Valume 189, No. 11

Technology Adventure Home Automotive Science

IVICE CITY ANNUAL BREAKTHROUGH AWARDS

20 BOLD IDEAS

SALUTING
THE
GREATEST
INNOVATIONS
OF 2012

Self-Inflating Tires!

AUTOMOTIVE

MEDITTALE

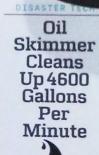
Brain-Controlled Prosthetic Arm

MATERIAL!

Metal Light as a Feather

The SpaceX Dragon capsule returns from the ISS

This Machine Can Walk Faster Than You



SPACE REBEL

VISIONARY BEHIND SPACEX AND TESLA MOTORS

BREAKTHROUGH AWARD WINNER

MECHANICAL LIFETIME ACHIEVEMENT

Voyager 1: Traveling to the Edge of the Solar System

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Plugging Into the Brain



Brain—Computer
Interface:
Michael Boninger,
Jennifer Collinger,
Alan Degenhart,
Andrew Schwartz,
Elizabeth TylerKabara, Wei Wang,
University of Pittsburgh; Tim Hemmes

On the evening of July 11, 2004, Tim Hemmes, a 23-year-old autodetail-shop owner, tucked his 18-month-old daughter, Jaylei, into bed and roared off for a ride on his new motorcycle. As he pulled away from a stop sign, a deer sprang out. Hemmes swerved, clipped a mailbox, and slammed headfirst into a guardrail. He awoke choking on a ventilator tube, terrified to find he could not lift his arms to scratch his itching nose.

Seven years later Hemmes was invited to participate in a University

