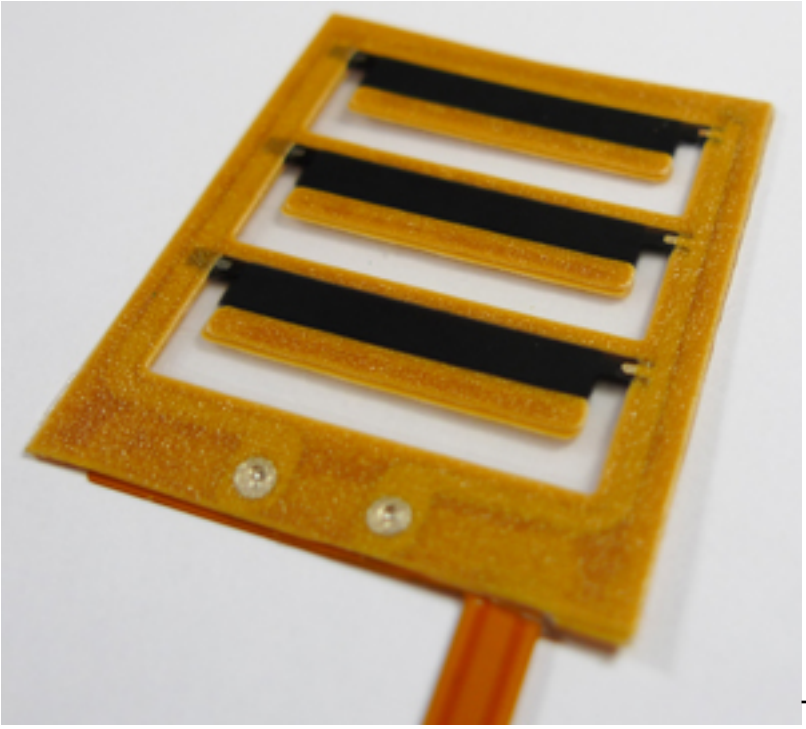
Getting Back “in Touch” with Mobile Devices

Dirk Schapeler, CEO, Artificial Muscle Inc.

Downloading customized ringtones is so 2010.

Varying the “touch” or “feel” of tomorrow’s touchscreens represents the next wave of mobile device customization thanks to advances in Electroactive Polymers (EAP) actuator technology. Imagine downloading customized effects that enable a mobile device’s smooth touchscreen to mimic keys on a keyboard, coarse sand paper, or the heartbeat of a newborn child.

Timing, they say, is everything. In this case, this novel actuator technology comes as the touchscreen mobile device market continues to grow, and designers attempt to provide consumers with the interaction they’ve come to expect from traditional keypad-based devices. Gartner research (www.gartner.com) estimates the touchscreen mobile device market will account for 58 percent of all mobile devices worldwide, and more than 80 percent in developed markets, by 2013.



The EAP actuator technology enhances user experience of mobile devices by synchronizing haptic feedback with

the sight and sound of applications used in mobile devices and other electronic devices. The actuator’s wide frequency range (50 Hz to 300 Hz) and rapid response time (5 ms) allow for unlimited combinations of touch sensations. Additionally, the technology offers low power consumption – reducing battery drain compared with other technologies.

Currently, the two integrations of the actuators, a Moving Touch Sensor Design and a Battery Shaker Design, are available. The Moving Touch Sensor Design uses a Bayfol Reflex HIC Actuator to provide a direct tactile response to the user by moving the touch surface. The HIC can be mounted to the back of the touch sensor or the LCD. Designers are attracted to the thin profile, which is designed to add minimal thickness to the LCD and touchscreen stack.

The Battery Shaker Design, which uses a Bayfol Reflex HIC Actuator to move the battery as a mass to provide feedback that can be felt in a user’s hand, provides the same strong, haptic feedback as the Moving Touch Sensor design, but does not require the complexity of external moving parts.

Consumers want the best of both worlds – a sleek touchscreen look, along with the keyboard sensation they’re accustomed to. Very soon, with technologies, such as the EAP actuators, consumers will have it all. What a cool way to stay in touch.

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