February 23, 2009

Graduate School of Engineering, Iwate University
4-3-5 Ueda, Morioka, Iwate 020-8551, Japan
Nippon Electric Glass Co., Ltd.
7-1, Seiran 2-chome, Otsu, Shiga 520-8639, Japan

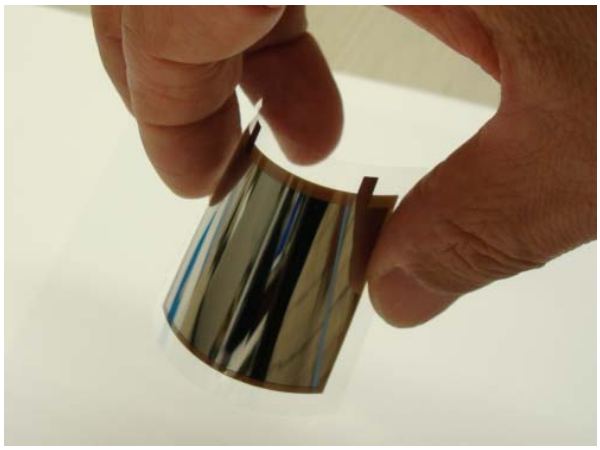
Iwate University and Nippon Electric Glass Jointly Develop World's Thinnest 30-μm Glass-Substrate Lithium-Ion Secondary Battery

Mamoru Baba, Professor at the Graduate School of Engineering at Iwate University and Nippon Electric Glass Co., Ltd. (head office: Otsu, Shiga, Japan; President: Yuzo Izutsu) have successfully developed the world's first thin-film lithium-ion secondary battery using an RF sputtering technique on a 30-μm-thick non-polished ultra-thin glass substrate.

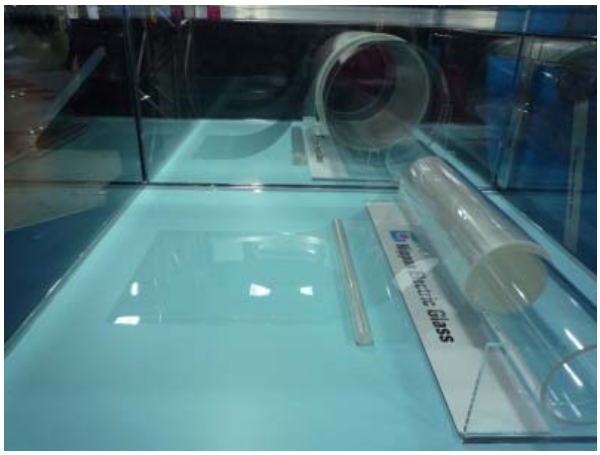
Nippon Electric Glass has sought to manufacture ultra-thin sheet glass by applying manufacturing techniques used to produce glass substrates for liquid crystal display panels. It has recently developed a glass substrate measuring a mere 30 μm in thickness. This glass features an extremely smooth non-polished surface, making it the ideal substrate for forming thin films.

The development of this flexible, ultra-thin glass-substrate lithium-ion secondary battery is expected to help realize slimmer mobile electronic devices and next-generation IC cards. The newly developed technology also opens doors to the possibility of introducing the mass production of a roll-to-roll manufacturing process, with potential applications in the production of a wider-than-ever range of flexible glass-substrate thin-film electronic devices such as photovoltaic cells and organic light-emitting diodes.

This newly developed technology will be exhibited at the Nippon Electric Glass booth at the 2nd International Photovoltaic Power Generation Expo to be held at Tokyo Big Sight from February 25 to 27, 2009.



30-μm ultra-thin glass substrate lithium-ion secondary battery



Ultra-thin glass sheet