

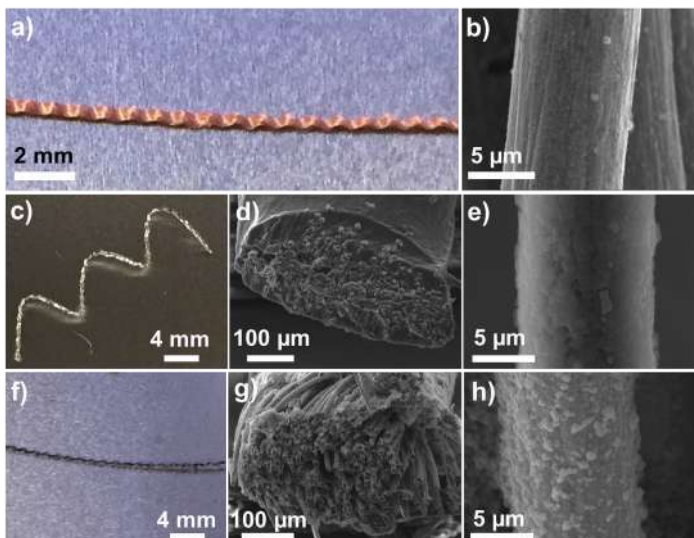
# Flexible Wire Type Lithium Battery

## 柔性線狀鋰金屬電池

Prof. Zijian ZHENG, Professor, Institute of Textile and Clothing (ITC)

### Special features 技術特點

- ▶ **Low resistance metallic fibrous carbon current collectors**  
低電阻金屬纖維碳集電器
- ▶ **Flexible fibrous lithium composite anodes**  
柔性纖維鋰複合陽極



可穿戴電子技術日漸受關注，估計其市場份額將在2025年達到800億美元。有見及此，理大團隊成功研究出具有全方位柔性和穩定電化學性能的柔性線狀鋰金屬電池。電池可彎曲至半徑少於1mm，並在0.2C電流密度下充放電多於400次。此技術可提供高性能儲能表現，可應用於柔性電子器件集成系統以及智慧服飾。

Flexible lithium metal batteries with high theoretical energy density are highly desired to power up various wearable electronics. The flexibility of current device is limited by either stacking device configuration or utilization of fragile current collectors (Cu and Al foil) and bulky lithium anode.

This technology involves the designing of omnidirectionally flexible wire-type lithium battery via scalable process. The cell achieves both remarkable device flexibility (flexing radius = 1mm) and high electrochemical performance (> 400 cycles' charge/discharge at 0.2 C).

This technology broadens the applications of flexible lithium batteries such as integration with bendable/foldable smartphones or woven into breathable electronic textiles.



Contact Us  
Ir Steven Lam, Manager  
Innovation and Technology Development Office  
T (852) 3400 2864  
E [steven.tf.lam@polyu.edu.hk](mailto:steven.tf.lam@polyu.edu.hk)



[www.polyu.edu.hk/itdo](http://www.polyu.edu.hk/itdo)