

## Supplementary Information

### PH modulated memristive behavior based on edible garlic constructed bio-electronic device

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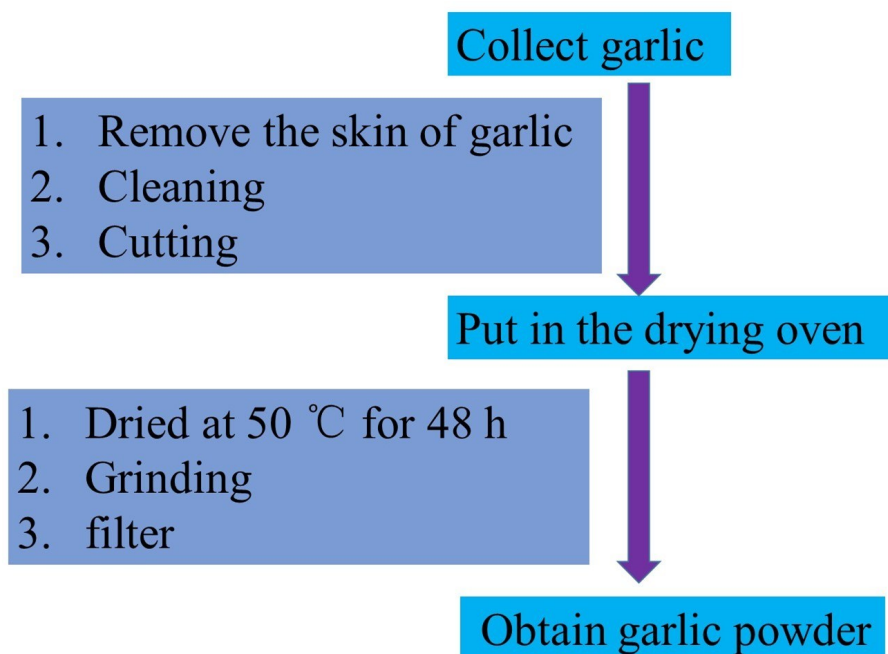
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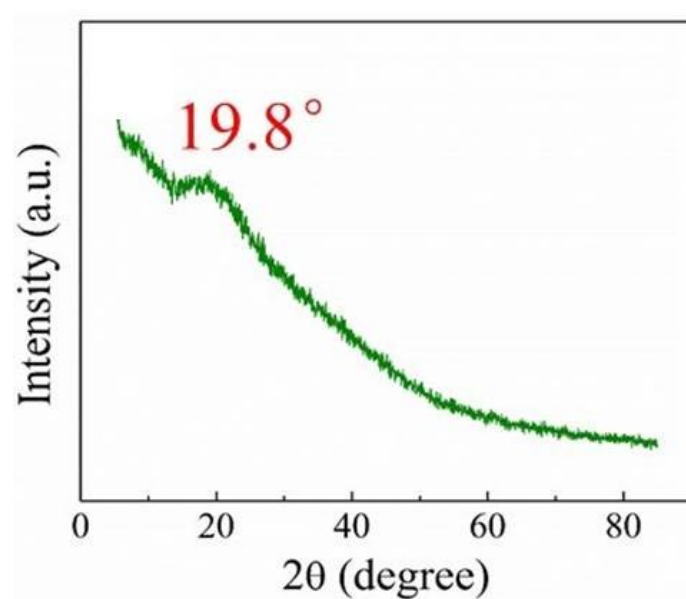
E-mail: bsun@swjtu.edu.cn (B. Sun); cyz@calypso.org.cn (Y. Chen)



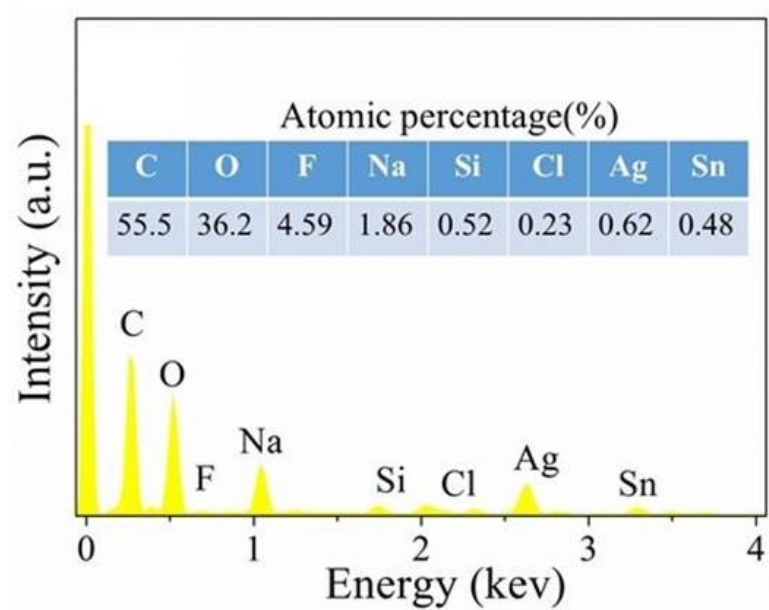
**Figure S1.** Preparation of garlic powder.



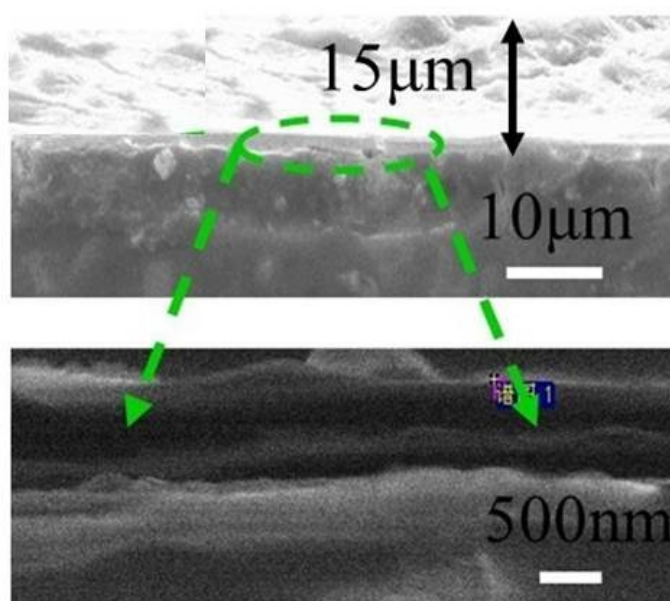
**Figure S2.** Flow chart for preparation garlic powder.



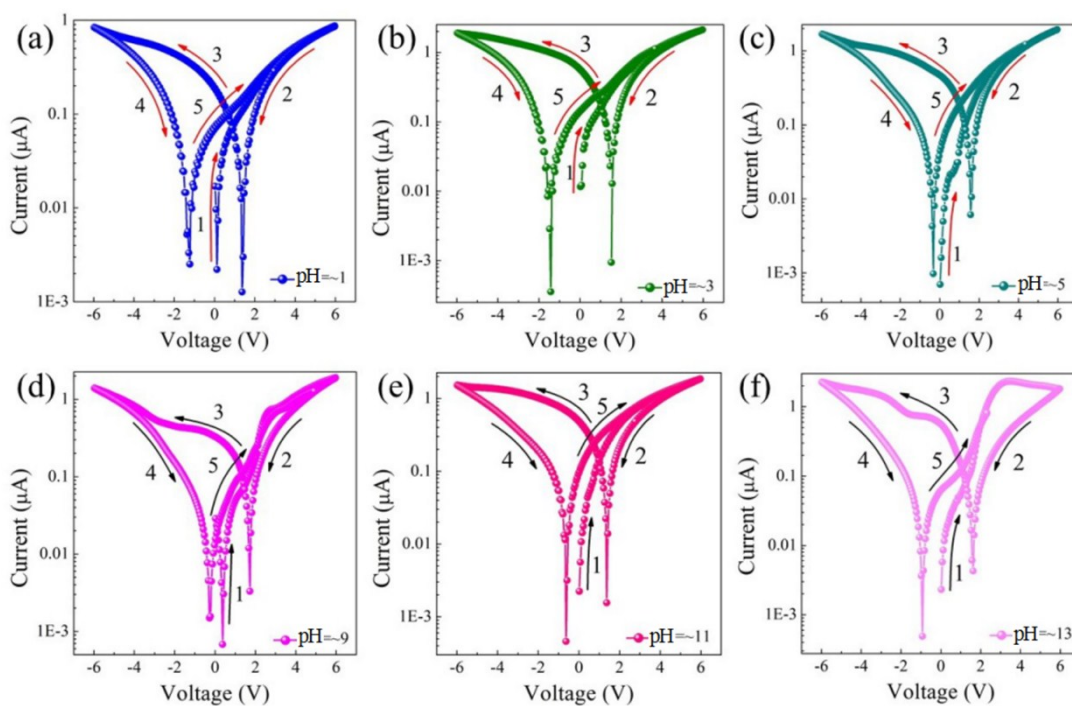
**Figure S3.** XRD spectra of garlic powder.



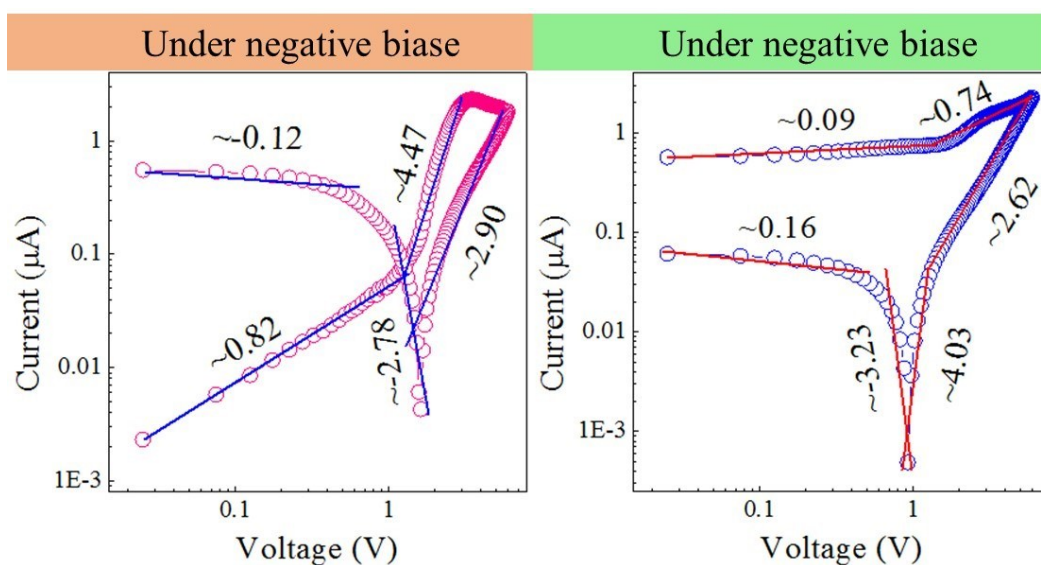
**Figure S4.** EDX spectrum of the memory device with Ag/Garlic/FTO structure, and the atomic ratios is showed in table.



**Figure S5.** The memory device functional layer thickness.



**Figure S6.** The first sweeping cycle current-voltage (I-V) curves on a logarithmic scale.



**Figure S7.** (a, b) The I-V curves in log-log scale in the positive and negative voltage sweep regions respectively under  $\text{pH} \approx 13.0$ .