Stabilizing organic electronics devices for long-term environmental sensing

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Over the past decades organic electronic devices have been used in versatile flexible electronic applications such as OLED displays, photovoltaics, nonlinear optics, and sensing. Recently, the prospect of integrating disposable, flexible OFET-based sensors with lab on a chip applications has emerged, pushing the need for water-stable, high-mobility organic materials. We used an additives-based approach to passivate water-induced traps[1], making high-performance water-stable OFETs. The OFETs retain their performance after being immersed in different liquids over the course of a month. We also applied the same stabilization technique in WG-OFETs integrated with microfluidics, and explored the additional challenges in stabilizing these devices.

References (optional)

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