

## **Supporting Information for**

# **An Eco-friendly Way to Fire Retardant Flexible Polyurethane Foam: Layer-by-Layer Assembly of Fully Bio-based Substance**

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The flame retardant properties of the treated PUFs are evaluated by horizontal flame tests, as shown in Figure S1. As can be seen, un-coated PUF vigorously and completely burn. After PUF is coated by CS and AL, the sample starts to burn very slowly and extinguish at 105 s and 67 s for PUF-5 BL and PUF-10 BL, respectively. Additionally, the presence of CS-AL coating inhibits the dripping of PUF.



**Figure S1.** Snapshots showing horizontal burning tests of PUF, PUF-5BL and PUF-10BL