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Title: Covalent layer-by-layer grafting (LBLG) functionalized superhydrophobic stainless steel mesh for oil/water separation

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Highlights

A covalent layer-by-layer grafting mechanism for surface modification is proposed.

The mechanism relies on robust interaction of covalent bond within multilayers.

TMC was employed as a cross-linking agent for the interconnection effect.

The as-prepared mesh exhibited excellent stability in some extreme situations.

The water intrusion pressure is relatively high compared to earlier reports.

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