Table S1 Summary of the existing literature

Reference	Material	Method	Property	Evaporation rate
[1]	Janus structure: carbon fiber powder and insulated aramid fiber powder	Freeze-drying	Solar desalination	1.25 $kg•m^{-2}•h^{-1}$
[2]	Janus composite: vermiculite, MWCNTs and polydimethylsiloxane	Layer by layer deposition method	Solar desalination and soil remediation	1.48 $kg•m^{-2}•h^{-1}$
[3]	Ferric tannate/gallate polyurethane sponge	Polymerization	Solar desalination	1.76 $kg•m^{-2}•h^{-1}$
[4]	Au/Ag cellulose-based membranes	Polymerization	Solar desalination	1.31 $kg•m^{-2}•h^{-1}$
[5]	Balsa wood carbonization	450 ºC sintering	Solar desalination	1.52 $kg•m^{-2}•h^{-1}$
[6]	Graphene oxide-poly (ethyleneimine)-melamine foam	Dip-coating	Solar desalination	1.392 $kg•m^{-2}•h^{-1}$
[7]	Bi_2WO_6/CdS heterojunction	Solvothermal method	Pollutant degradation	----

[8]	Bi_2WO_6/BiOBr/RGO heterojunction	Hydrothermal method	Pollutant degradation	----
[9]	Superhydrophobic SiO_2-TiO_2 fabric	Dip-coating	Oil/water separation	----
[10]	Melamine-graphene aerogel	Freeze-drying	Oil removal	----
This paper	Devices assembled by PDVB/SiO_2/Bi_2WO_6 floating layer, filter paper layer and CuO layer	Polymerization and Solvothermal method	Pollutant degradation, oil removal and water steam generation	1.53 $kg•m^{-2}•h^{-1}$

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