POLYETHERSULFONE/3-AMINOPROPYLTRIETHOXYSILANE-SILICA COMPOSITE HOLLOW FIBER MEMBRANE FOR SYNTHETIC OIL-IN-WATER EMULSION SEPARATION

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by

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LIST OF ABBREVIATIONS

AFM	Atomic force microscopy
AG	Air gap
ANOVA	Analysis of variance
APTES	3-aminopropyltriethoxysilane
ATR	Attenuated total reflection
BF	Bore fluid
BFT	Bore fluid temperature
CA	Contact angle
CBT	Coagulation bath temperature
CCD	Central composite design
CP	Condensation polarization
CPr	Coagulation power
DCMD	Direct contact membrane distillation
DEF	Dope extrusion flowrate
DEP	Dope extrusion pressure
DI	Deionized
DLS	Dynamic light scattering
DMAC	N-N-dimethylacetamide
DMF	Dimethylformamide
DMSO	Dimethylsulfoxide
DOE	Design of experiment
DR	Draw ratio

EDX	Energy Dispersion X-Ray
EG	Ethylene glycol
FESEM	Field emission scanning electron microscopy
FRR	Flux recovery ratio
FTIR	Fourier transform infrared
HF	Hollow fiber
IE	Interfacial energy
LCST	Lower critical solution temperature
Md	Mean diameter
MMM	Mixed matrix membrane
MPS	Mean pore size
NPs	Nanoparticles
OPF	Oil permeate flux
OR	Oil rejection
PDA	Polydopamine
pdI	Polydispersity index
PEG	Polyethylene glycol
PES	Polyethersulfone
PSD	Pore size distributions
PVA	Polyvinyl alcohol
PWF	Pure water flux
RF	Relative flux
RFR	Relative flux reduction
RSM	Response surface methodology

RT	Residence time
SiO_2	Silica
TEM	Transmission electron microscopy
TEOS	Tetraethylorthosilicate
TGA	Thermogravimetric analysis
TMP	Transmembrane pressure
TS	Take-up speed
UF	Ultrafiltration
UV	Ultraviolet
WCA	Water contact angle