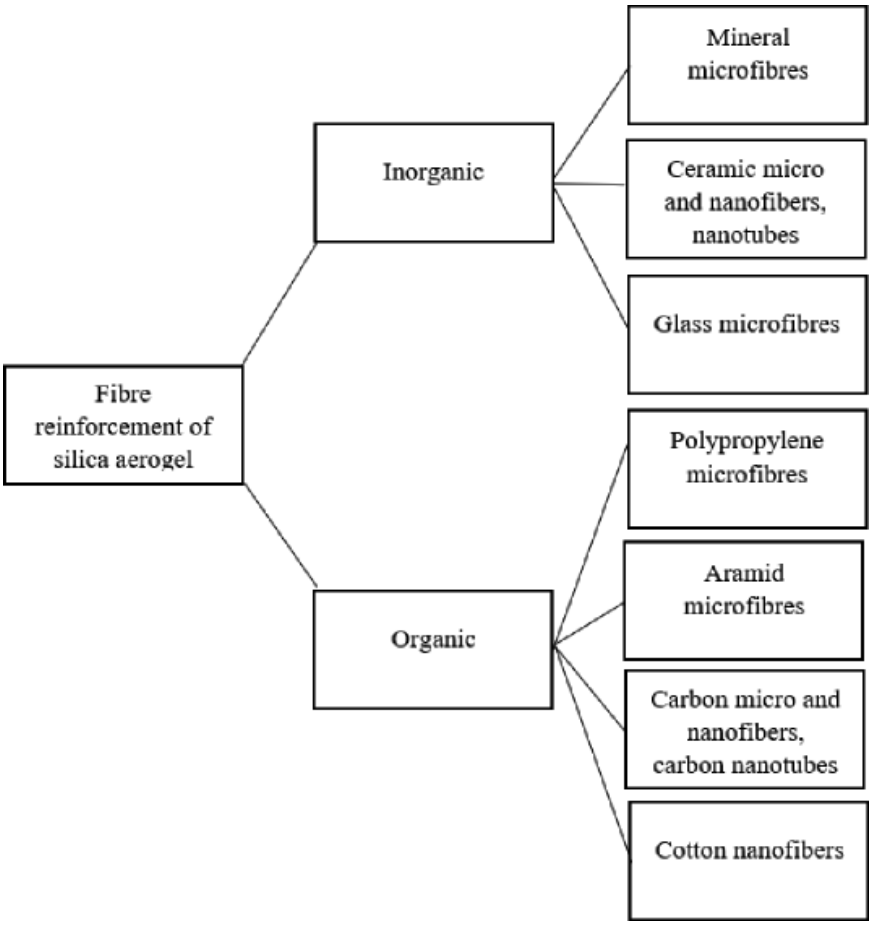
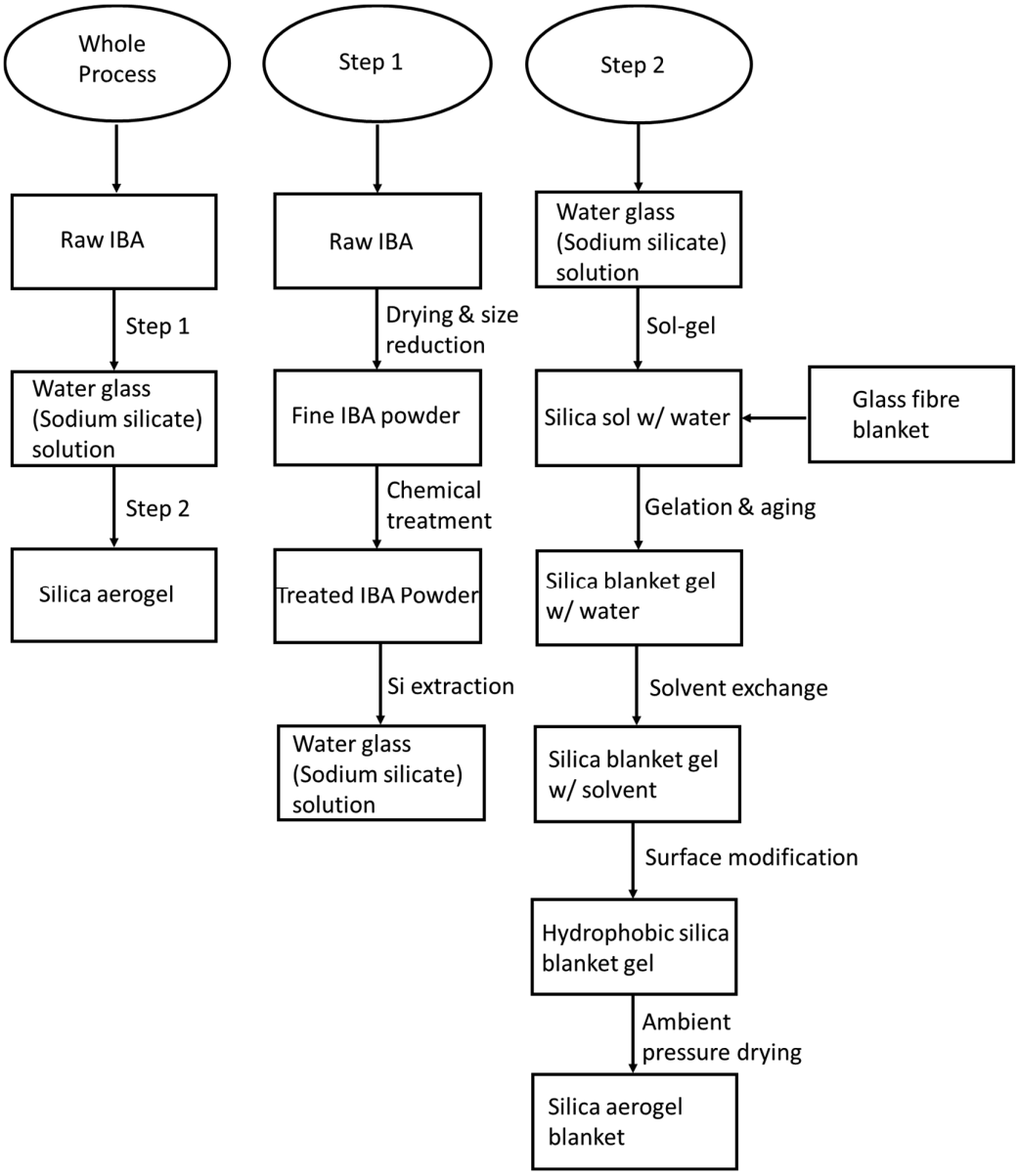
[Fig. 1]

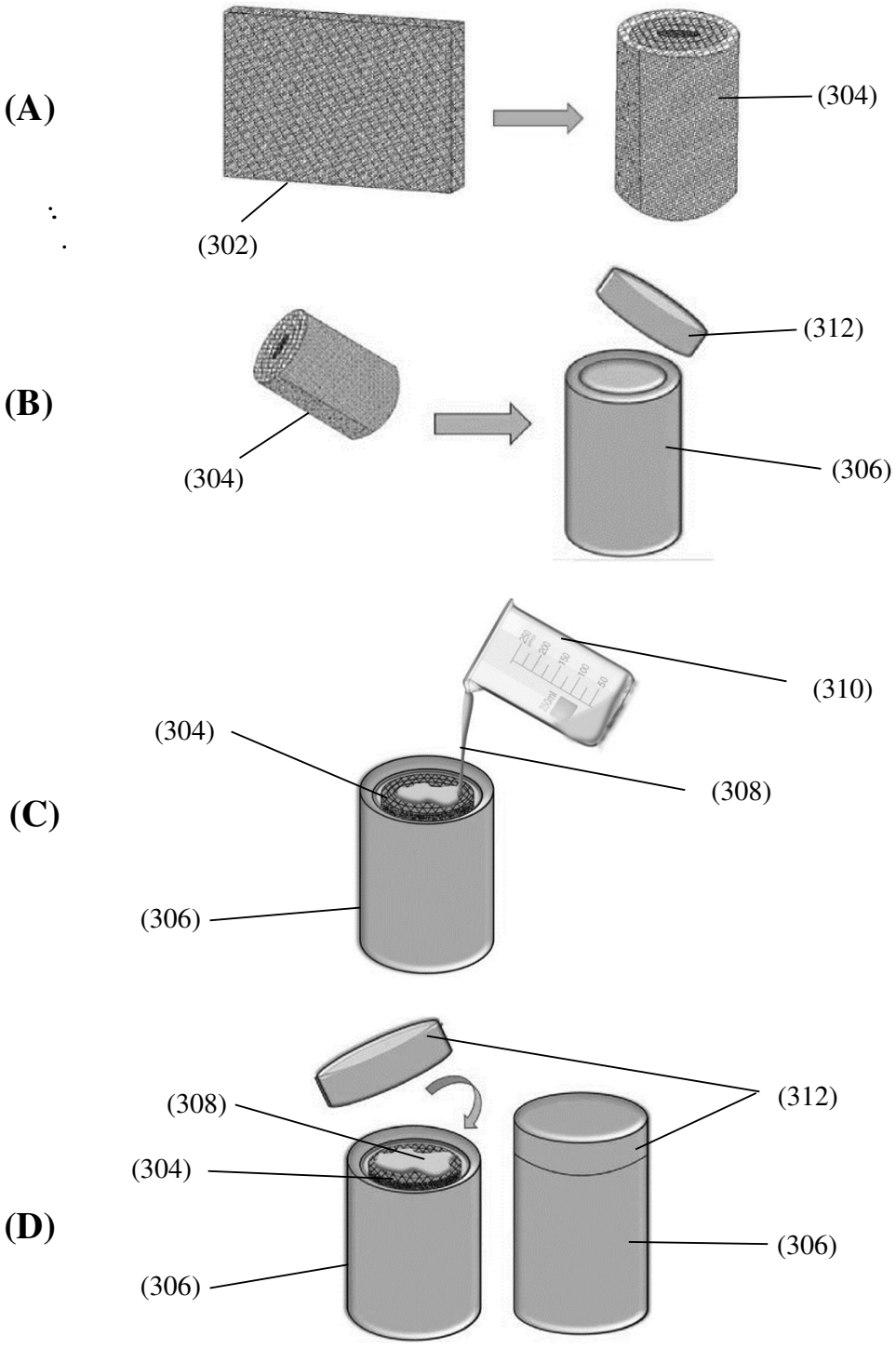


(Prior Art)

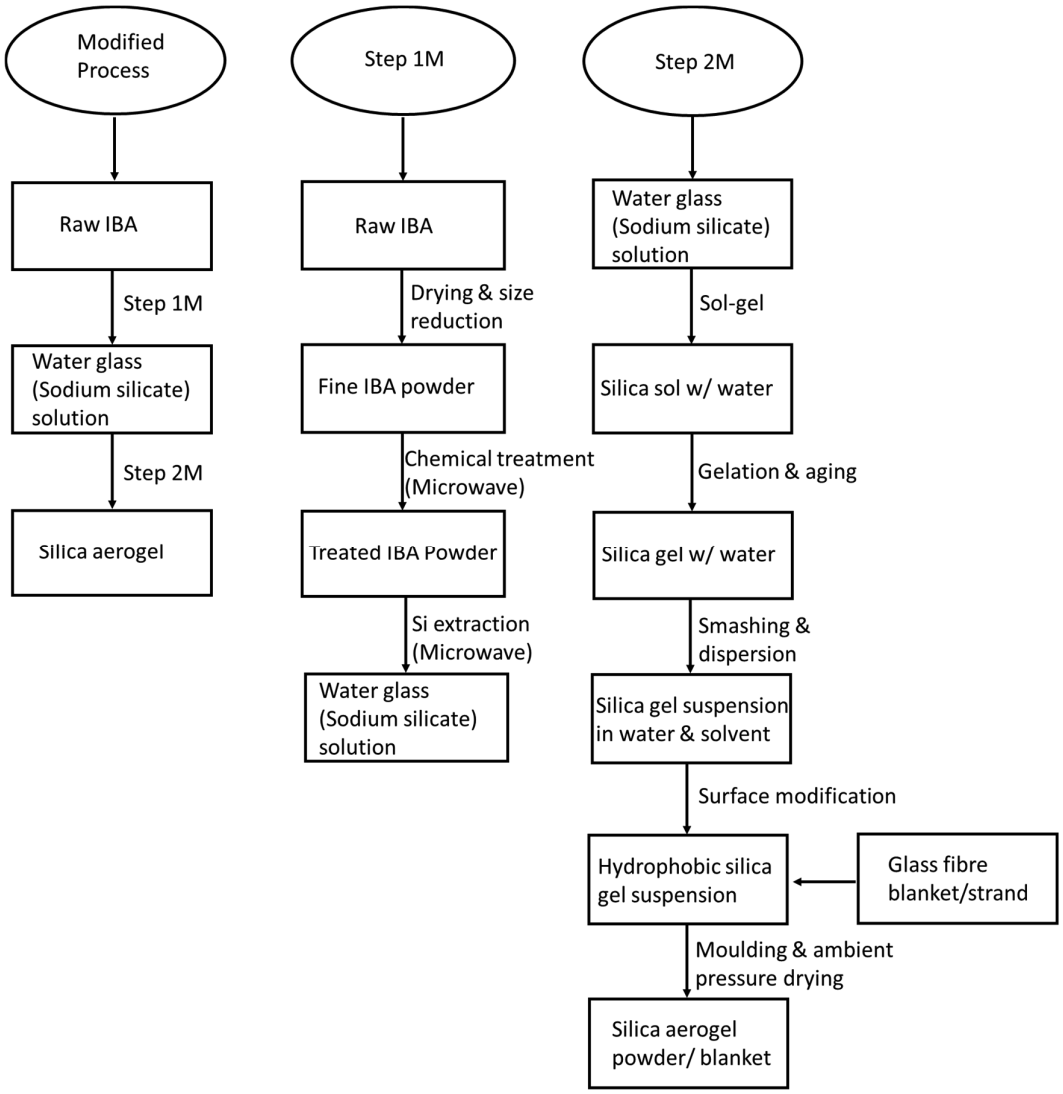
[Fig. 2]


Whole Process
Raw IBA
Step 1
Water glass (Sodium silicate) solution
Step 2
Silica aerogel
Step 1
Raw IBA
Drying & size reduction
Fine IBA powder
Chemical treatment
Treated IBA Powder
Si extraction
Water glass (Sodium silicate) solution
Step 2
Water glass (Sodium silicate) solution
Sol-gel
Silica sol w/ water
Glass fibre blanket
Gelation & aging
Silica blanket gel w/ water
Solvent exchange
Silica blanket gel w/ solvent
Surface modification
Hydrophobic silica blanket gel
Ambient pressure drying
Silica aerogel blanket

[Fig. 3]



[Fig. 4]


Modified Process
Raw IBA
Step 1M
Water glass (Sodium silicate) solution
Step 2M
Silica aerogel
Step 1M
Raw IBA
Drying & size reduction
Fine IBA powder
Chemical treatment (Microwave)
Treated IBA Powder
Si extraction (Microwave)
Water glass (Sodium silicate) solution
Step 2M
Water glass (Sodium silicate) solution
Sol-gel
Silica sol w/ water
Gelation & aging
Silica gel w/ water
Smashing & dispersion
Silica gel suspension in water & solvent
Surface modification
Hydrophobic silica gel suspension
Glass fibre blanket/strand
Moulding & ambient pressure drying
Silica aerogel powder/ blanket