

Tecnologia delle fibre ottiche

Classificazione delle fibre ottiche in base al materiale costituente

Fibre di materiale plastico

(nucleo di polistirene e mantello di polimetilmetacrilato)

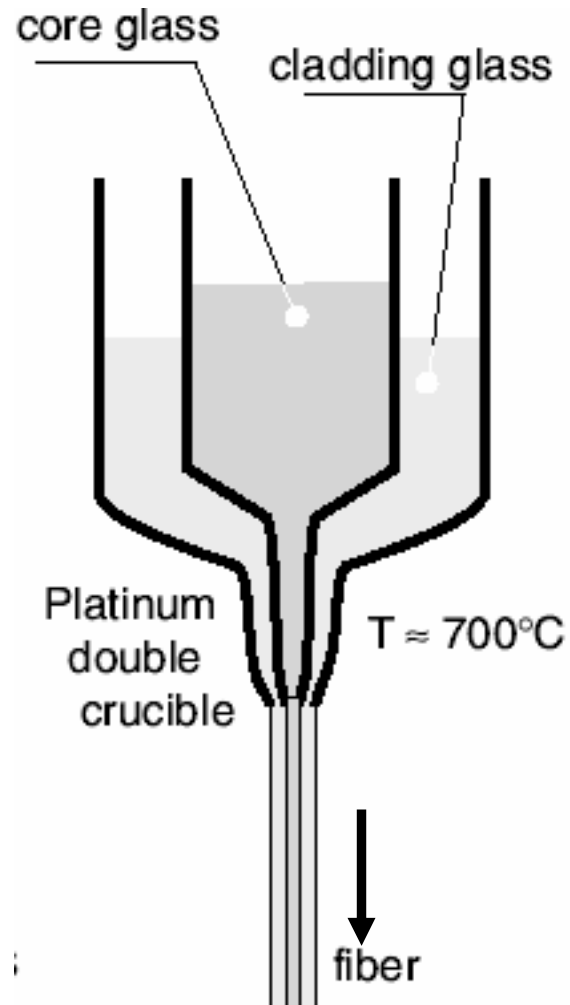
Fibre di vetri multicomponenti

(borosilicati, etc.)

Fibre in vetro di silice

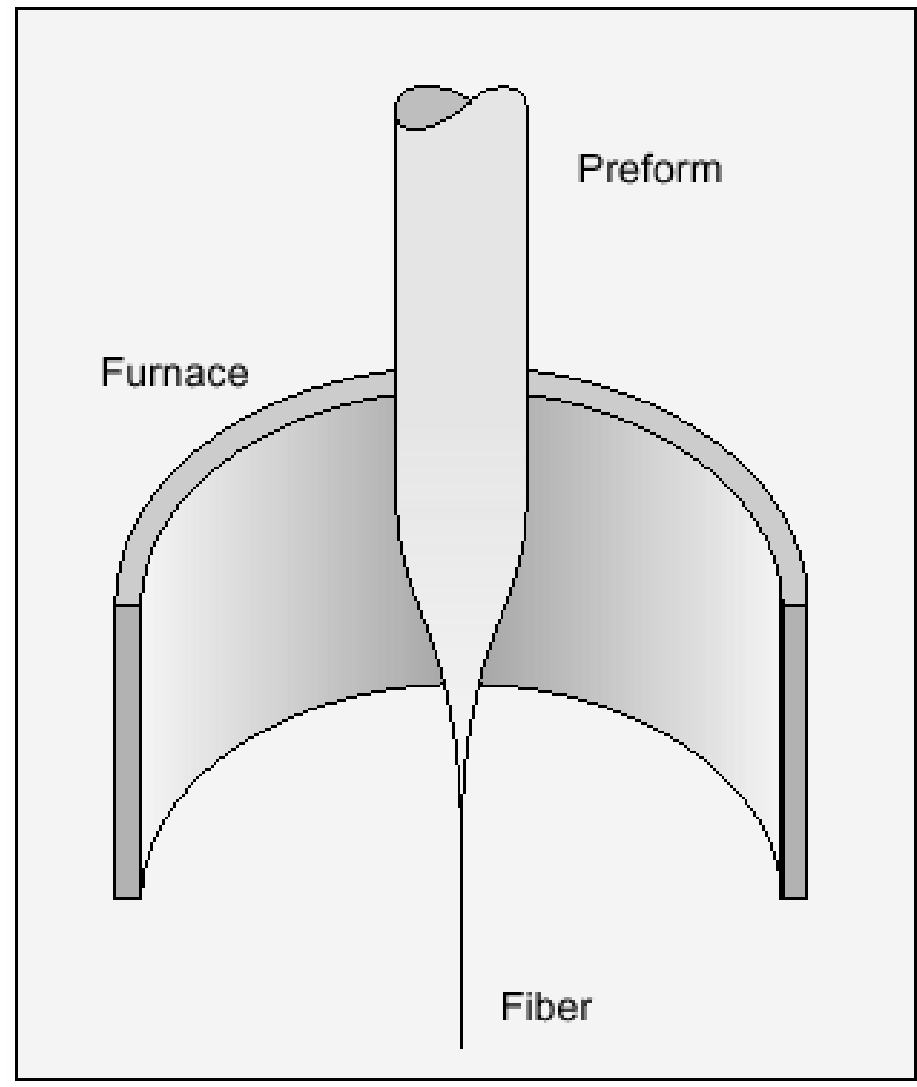
Tecnologia delle fibre ottiche di vetri multicomponenti

Metodo del doppio crogiolo

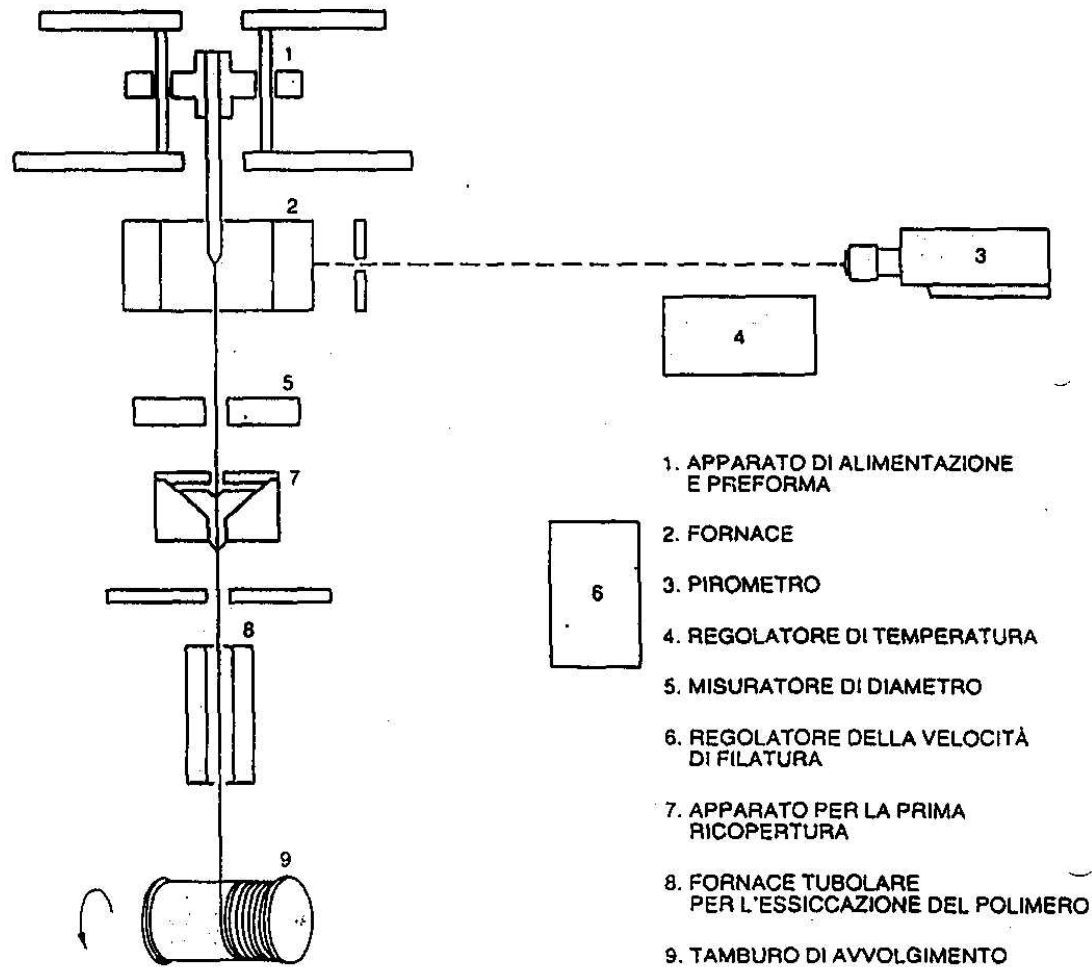


Tecnologia delle fibre di silice

Metodo della
preforma



Sistema di "tiraggio" delle fibre ottiche di silice

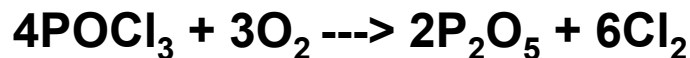
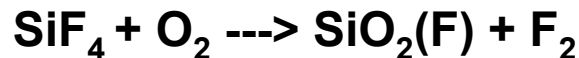
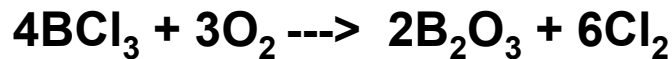


Realizzazione della preforma

Chemical vapour deposition (CVD)

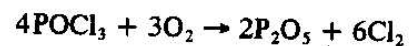
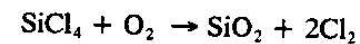
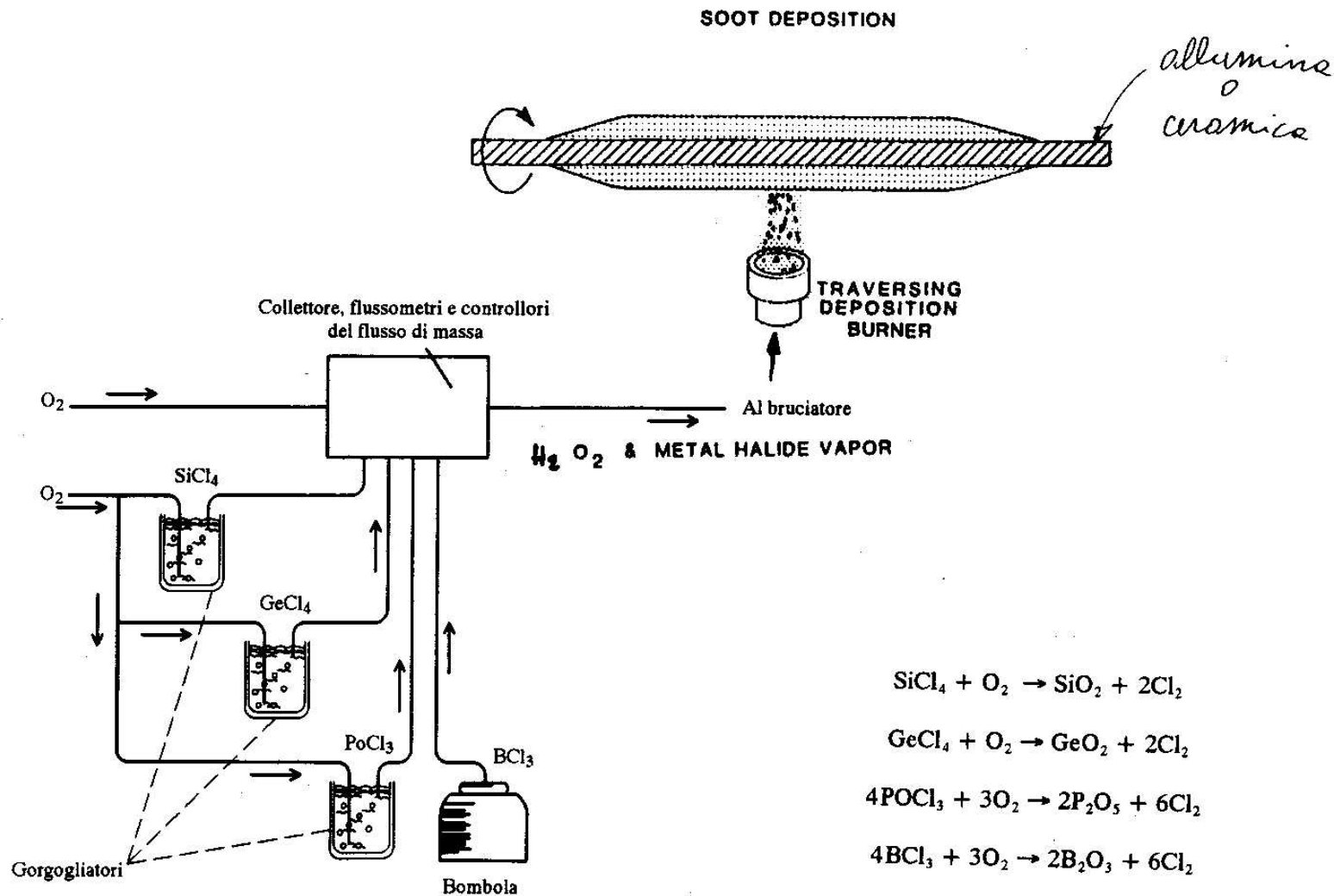
Obbiettivo: realizzazione di silice sintetica drogata opportunamente:

Le principali reazioni di deposizione che hanno luogo sono:

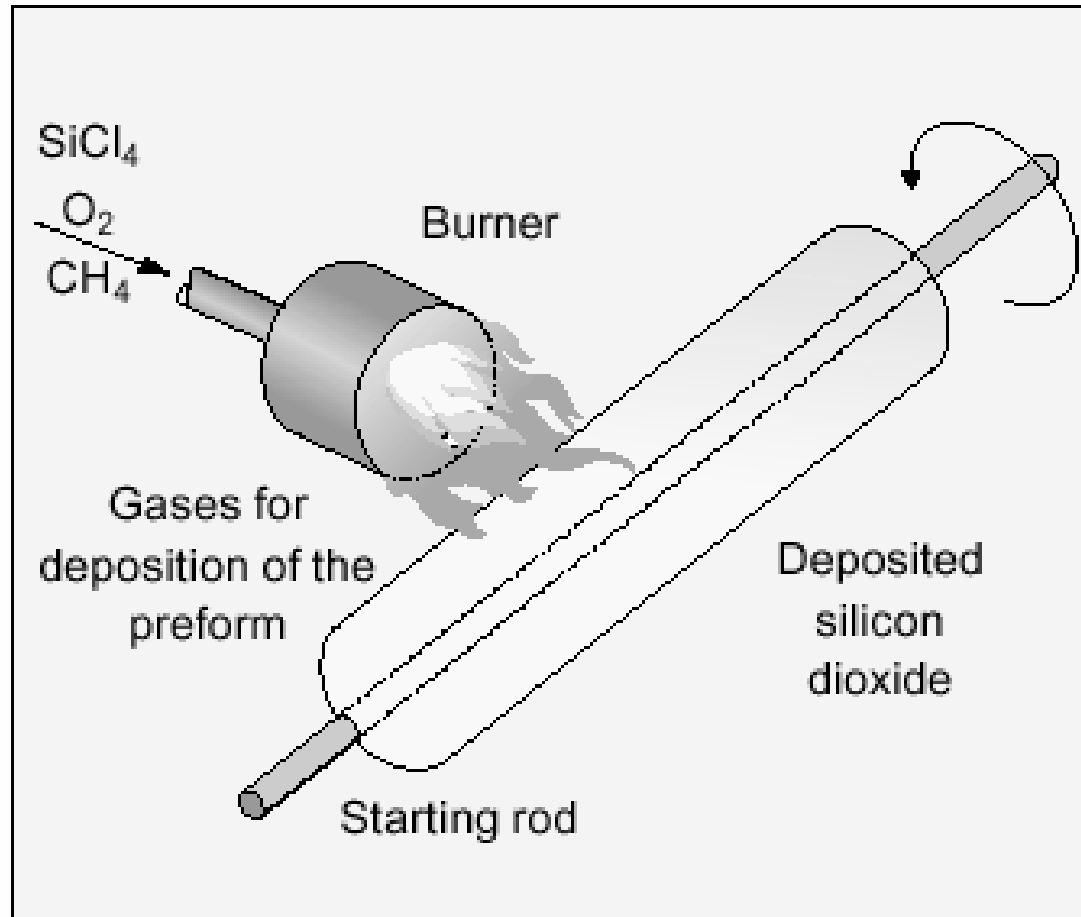


Processo di "Soot deposition" -

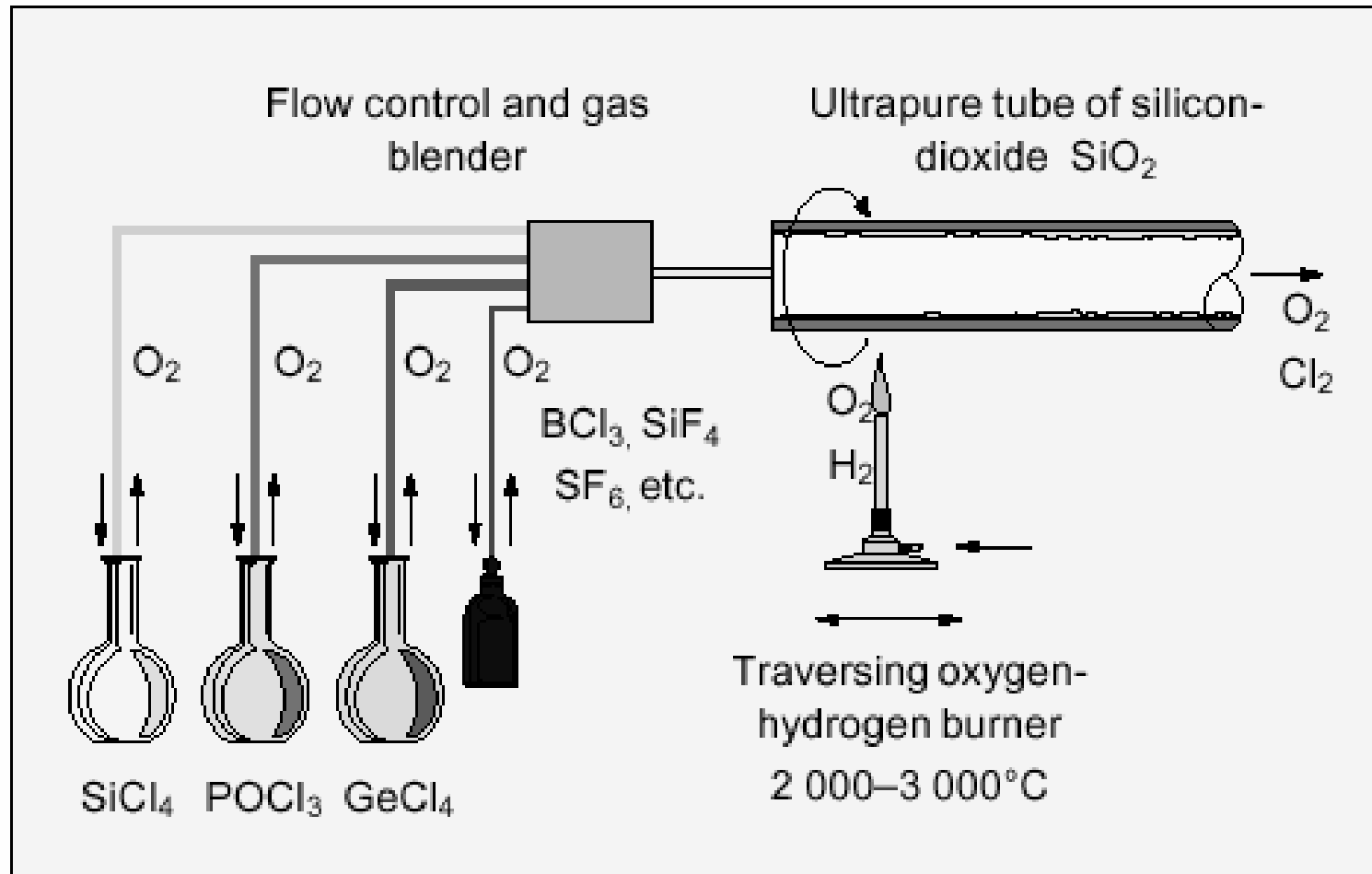
OVPO (Outside Vapour Phase Oxidation)



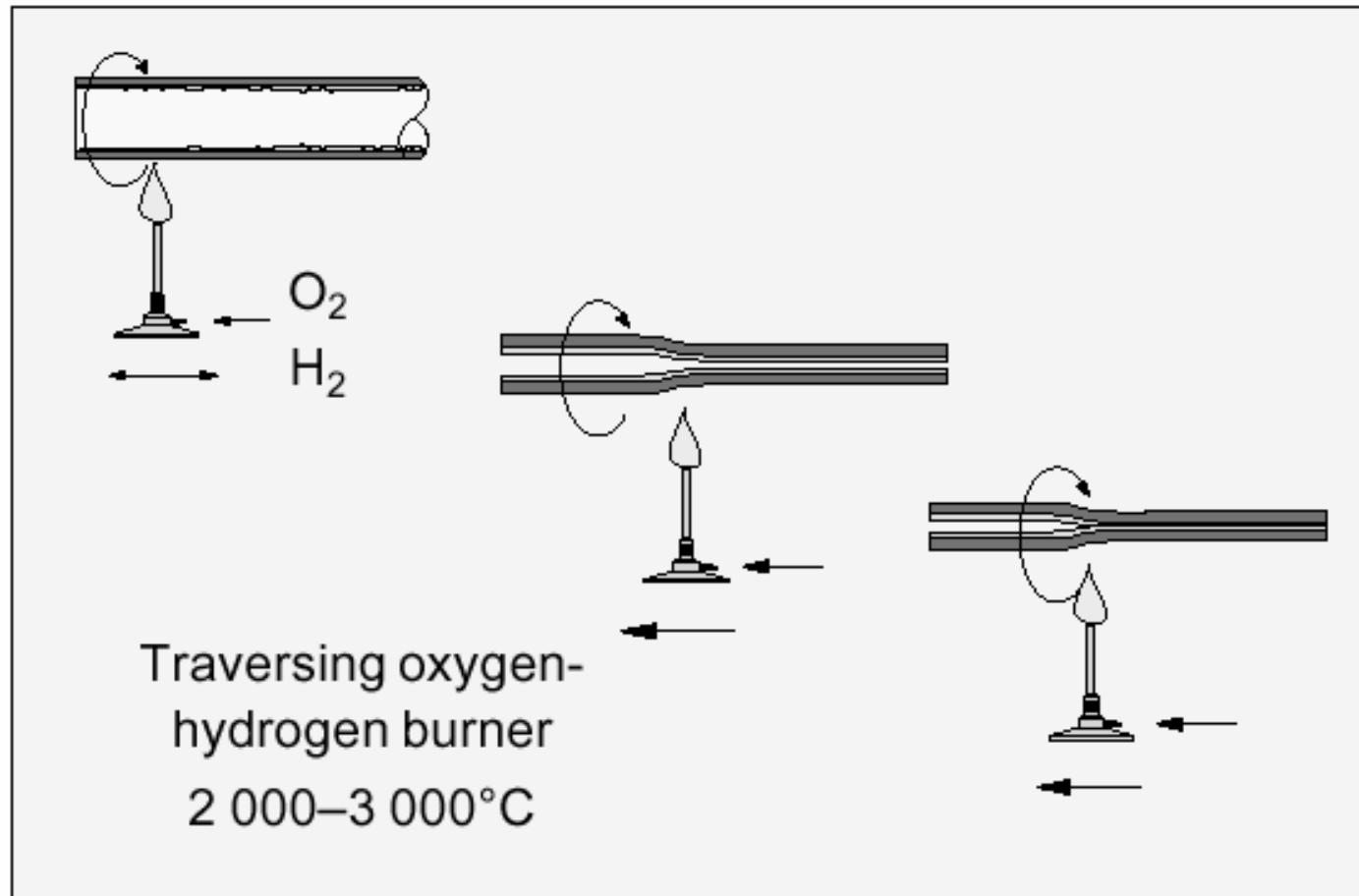
Outside Vapor Deposition



Modified CVD - IVPO (Inside Vapour Phase Oxidation)

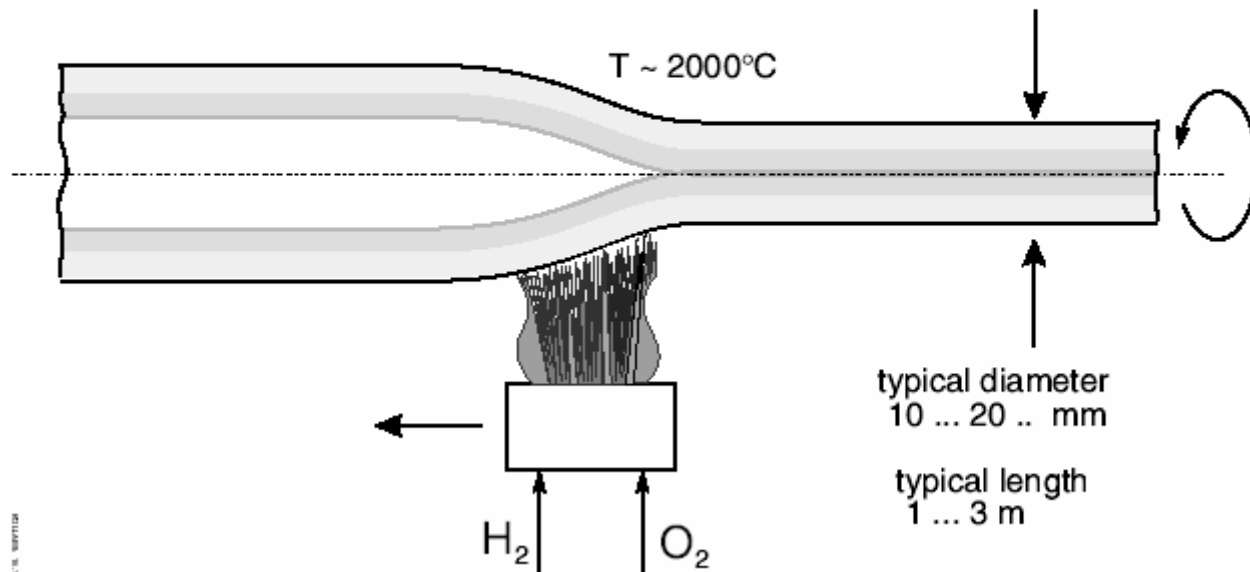


Collapsing the preform



fabrication of silica optical fibers

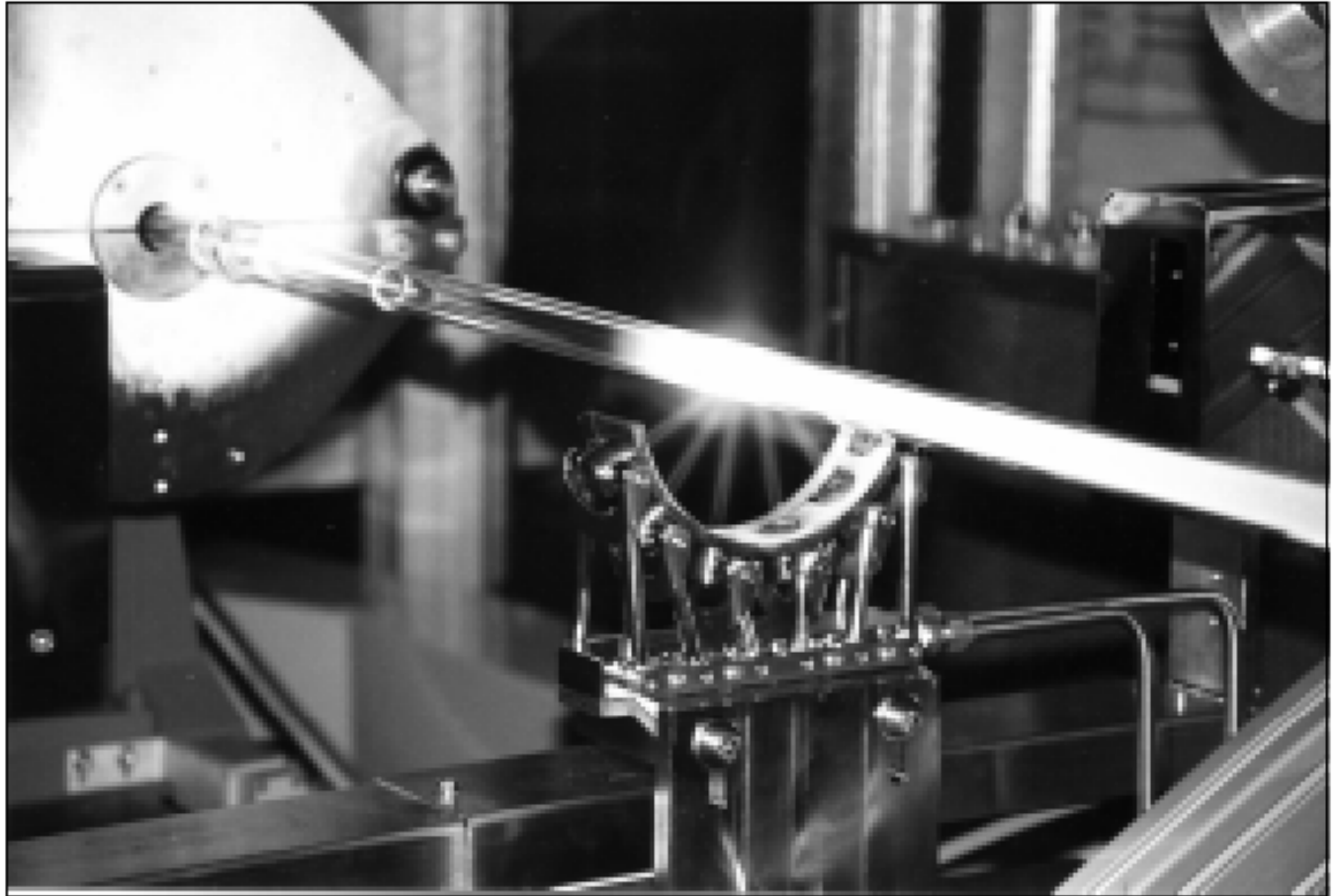
- (2) collapsing the preform: under the influence of surface tension
at the outside and inside wall of the preform tube





Optoelettronica - M. Brenni

Preform: material depositing Modified Chemical Vapor Deposition

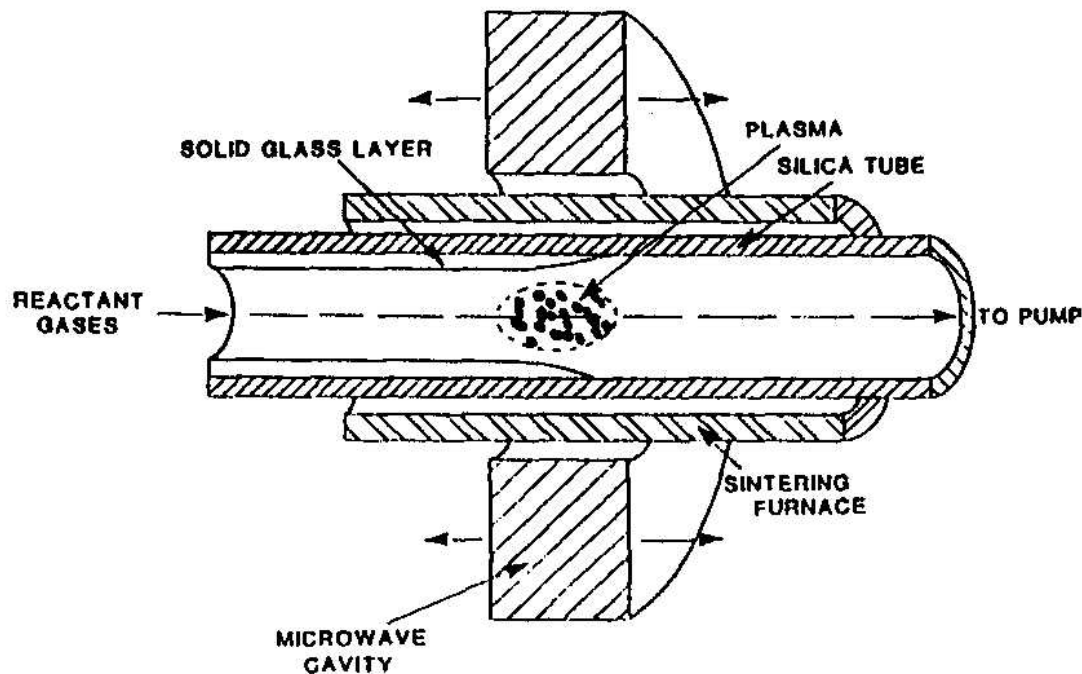


*Fig. 3-4
MCVD-
deposition at
Acreo Fiber
Lab
in Hudiksvall
Sweden*

CVD ATTIVATO MEDIANTE PLASMA (PCVD)

→ Processo IVPO

→ Formaz. ossidi provocata da un plasma
(cavità rison. $f=2-3$ GHz; $P=100-550$ W)



Processo continuo VAD (Vapour Phase Axial Deposition)

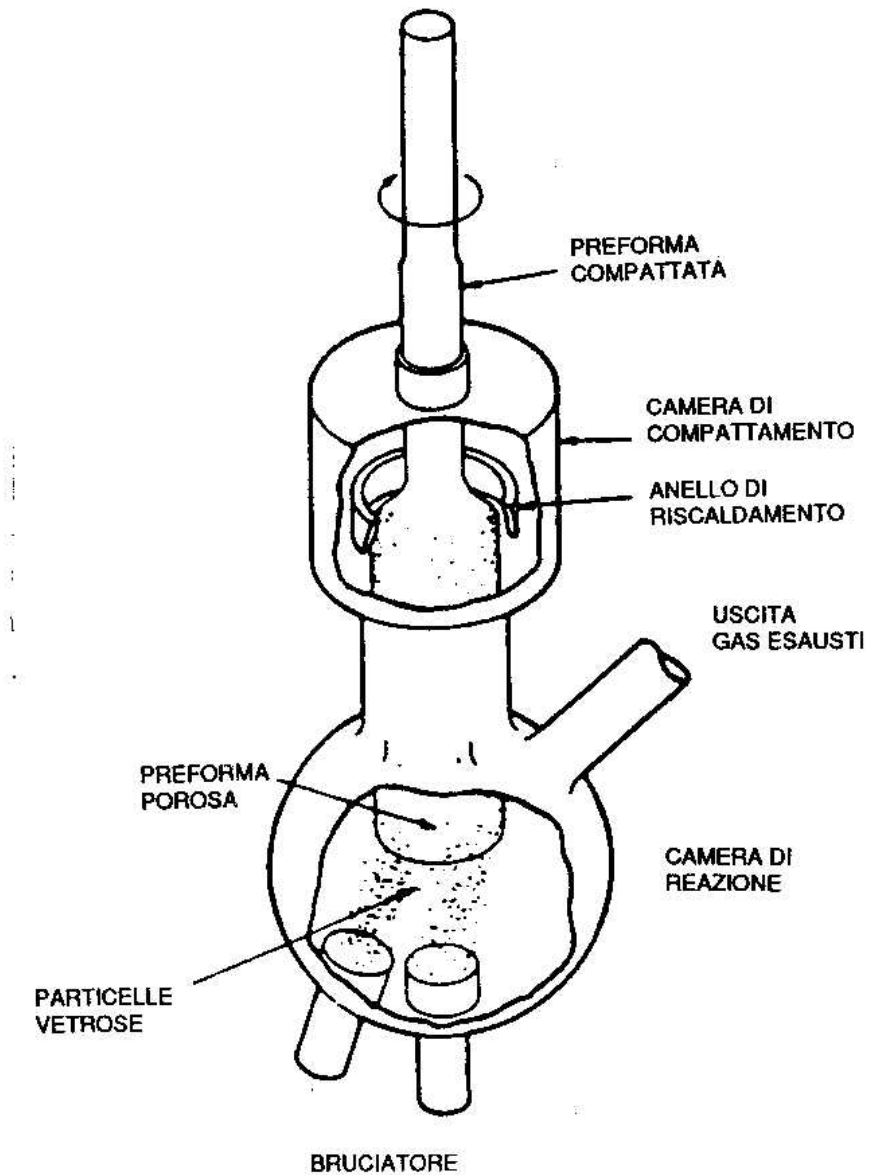


Fig. 4 - Schema del processo VAD