

AES-04

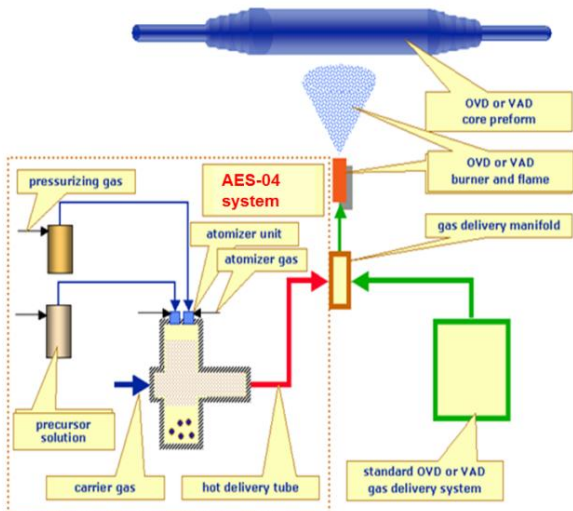
Aerosol & nanoparticle doping system



Applications:

AES-04 Aerosol doping system is an add-on device for preforms fabrication equipment, either for CVD or OVD processes. System delivers special precursors into deposition zone or flame by injecting aerosols. This method permits injection of either droplet/gas or (nano) particle/gas mixtures for in-situ deposition for fabrication of rare earth- or metal ion-doped silica for active and sensor fibers. AES technique allows development of new and novel glass materials.

Description:



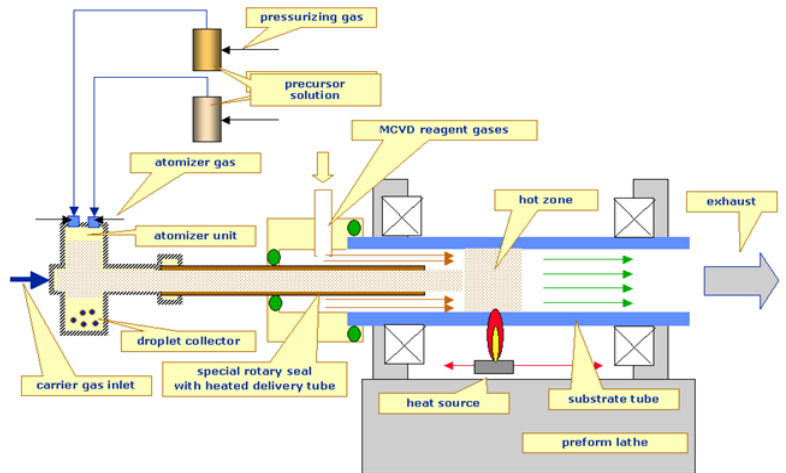
natural elimination of large droplets.

Precursors & Solvents:

A wide range of organometallic (chelates and other β -diketonates) or inorganic chemicals can be used as precursors, in combination with suitable solvents (including water, alcohols and non-polar organic solvents). TEOS and D4 are often used as silicon precursor, and in certain cases SiCl_4 can be used. Another possibility is doping of glass matrix by submicron- and nanoparticles from a suspension, opening a new fields of application.

Accessories & Custom Design

AES-04 can be retro-fitted to a number of preform lathes or deposition systems, and can be custom developed for non-standard applications. Ask for details.



Aerosol is generated using Atokit™ pulsed injection device, based on flash vaporization process (see also Optacore's FVS-04 catalogue), coupled to process- or equipment-specific precursor delivery system, bringing vapor or nanoparticles directly into the reaction hot zone (for all CVD based processes, including MCVD, OVD or VAD).

It can work as stand-alone device or can be integrated with deposition device control system (best performance with WinOPTA control software). Atokit-based aerosol generator produces aerosols with narrowly distributed droplet sizes by impulse injection of precursor solution through nozzle under high pressure and large carrier gas flow conditions. Geometry of the conduits prior to injection into reaction hot zone permits

