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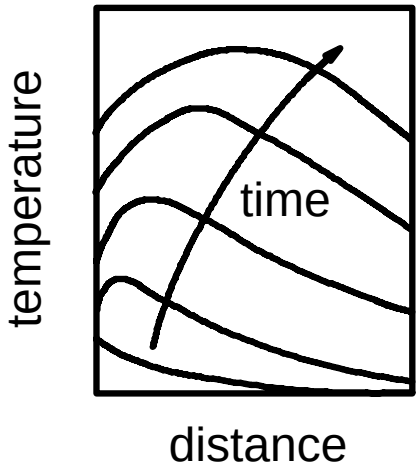
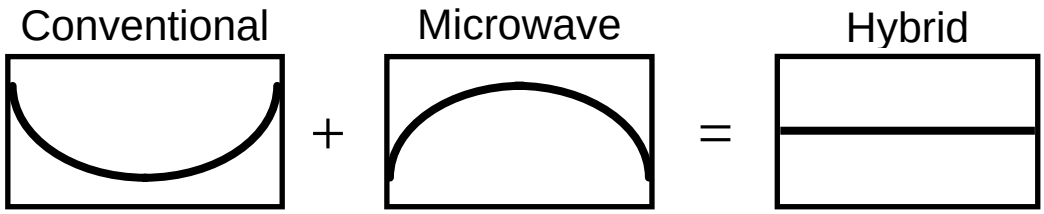
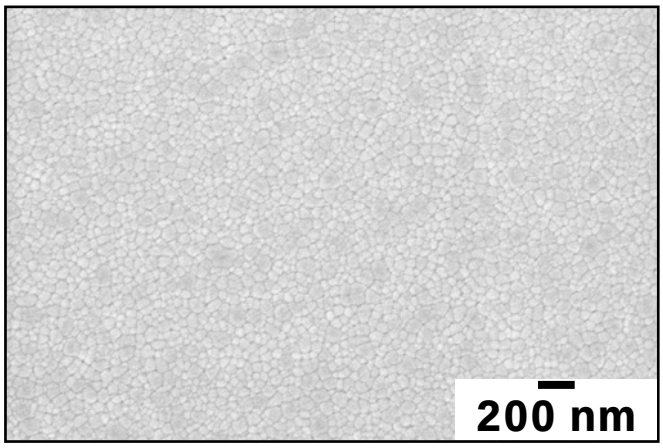
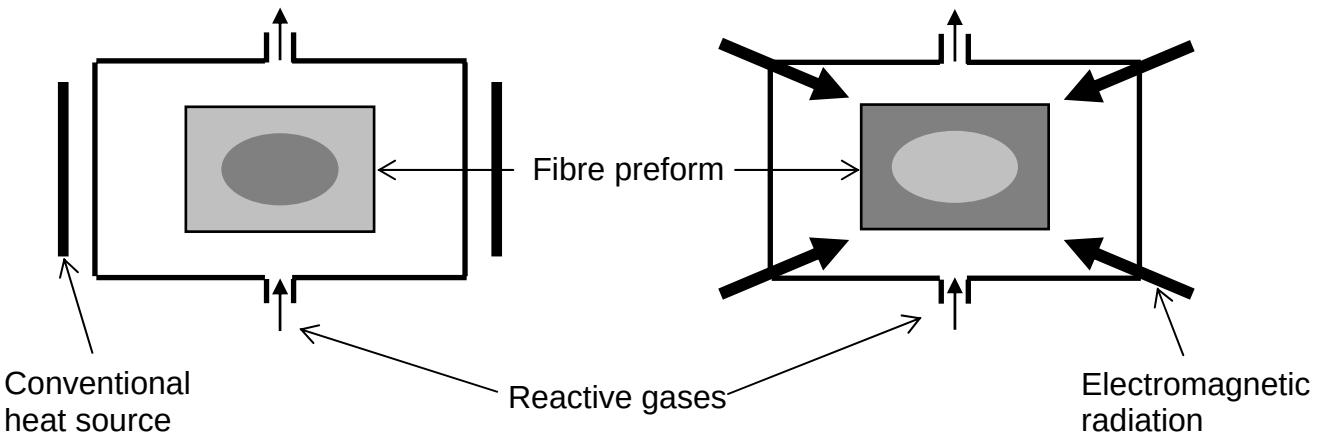
Figures listed in order below:

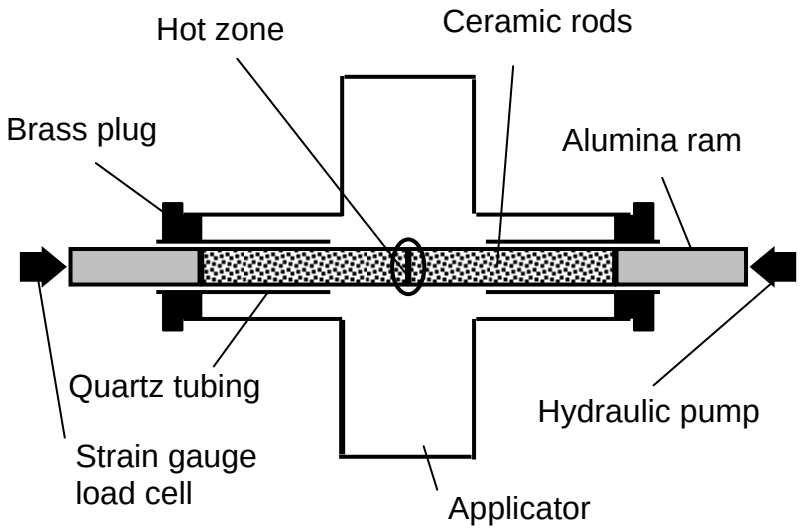
Figure 1: Development of an inverse temperature profile during heating.
Figure 2: Creation of a uniform temperature profile via combination of conventional and microwave heating.
Figure 3: Nanostructured zirconia ceramic with a density of >99% of theoretical and a final average grain size of ~64 nm, produced by hybrid two-stage sintering.
Figure 4: Conventional heating (a) leads to the fibre preform being hottest (light shade) at the surface, whilst microwave heating (b) leads to the fibre preform being hottest at the centre.
Figure 5: Schematic illustration of the use of a TE_{10n} single mode applicator for joining ceramics.








Fibre preform
Conventional heat source
Reactive gases
Electromagnetic radiation


Hot zone
Ceramic rods
Brass plug
Alumina ram
Quartz tubing
Hydraulic pump
Strain gauge load cell
Applicator