

## **Abstract**

An active optical fibre, including: a core; an inner cladding substantially surrounding the core, whereby the core and the inner cladding form an area configured to propagate pump radiation; an outer cladding comprised of at least a third material with at least a third refractive index substantially surrounding the inner cladding, the third refractive index being smaller than the second refractive index, whereby the outer cladding confines pump radiation to the core and the inner cladding; and a coating comprised of a thermally conductive material substantially surrounding the outer cladding, wherein the inner cladding is configured to reduce impact of spatial hole-burning on absorption of the pump radiation as the pump radiation propagates through the active optical fibre, and wherein the thermally conductive material of the coating supports a reduced temperature increase between the area and an outer surface of the coating.

Figure 3