

Title (en)

COUPLING DEVICE FOR COUPLING HOLLOW-CORE OPTICAL FIBRES COMPRISING A COUPLING ELEMENT

Title (de)

KOPPLUNGSVORRICHTUNG ZUR KOPPLUNG VON HOHLKERN-LICHTLEITFASERN MIT EINEM KOPPLUNGSELEMENT

Title (fr)

DISPOSITIF DE COUPLAGE POUR FIBRES OPTIQUES A COEUR CREUX COMPRENANT UN ELEMENT DE COUPLAGE

Publication

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Application

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Abstract (en)

[origin: WO2023281010A1] The invention relates to a coupling device (D) for coupling optical fibres, comprising: - a first hollow-core optical fibre (FO1) with inhibited coupling comprising a first micro-structured sheath (SCF1) comprising a plurality of confinement tubular first patterns (MCF1), distributed in an annulus and at least partially surrounding a first core (C1) so as to confine at least radiation at a first wavelength λ_{op} in the first core, - a second hollow-core optical fibre (FO2) with inhibited coupling comprising a second micro-structured sheath (SCF2) comprising a plurality of confinement tubular second patterns (MCF2), distributed in an annulus and at least partially surrounding a second core (C2) so as to confine the light radiation within the second core, - a coupling element (SCP) arranged between the first and the second core, said coupling element comprising at least a coupling tubular pattern (MCP, MCP1, MCP2, MTa) comprised at least partially within the first micro-structured sheath and/or the second micro-structured sheath and having a wall thickness t_{cp} referred to as the coupling thickness and a material index n_{cp} known as the coupling index, an arrangement of the coupling element, the coupling thickness t_{cp} and the coupling index n_{cp} being contrived in such a way as to create a leakage path for the wavelength λ_{op} so as to allow coupling of the radiation guided by the first optical fibre towards the second optical fibre and/or from the second optical fibre towards the first optical fibre.

IPC 8 full level

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