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(71)Name of Applicant :
1)GRIMM, Friedrich
Address of Applicant :Züricher Str. 18 70376 Stuttgart
Germany
(72)Name of Inventor :
1)GRIMM, Friedrich

(57) Abstract :

The invention relates to a fusion reactor (1) comprising a plasma vessel (20), coils (Q1-Qn), a cooling system (5), a heating system (4), a heat transfer system (6), a support system (7), and an injection system (8); said plasma vessel (20) being provided around a central midpoint (M), defining a plasma volume (2), and being surrounded by the coils (Q1-Qn); said coils (Q1-Qn) being in the form of Helmholtz coils or helical coils to form a spherical magnetic field having magnetic field lines (m1, m2-mn) in the plasma volume (2); said magnetic field lines (m1, m2-mn) having a central magnetic field line (m1), the coils (Q1-Qn) each being arranged concentrically around the central magnetic field line (m1); said central magnetic field line (m1) lying around the central midpoint (M1) in a closed loop consisting of four identical semi-circular arcs (B1-B4) having four apex points (V1-V4) and four connection points (J1-J4) lying in a common plane on a virtual first sphere having a first radius (r1); said cooling system (5) being provided for cooling the coils (Q1-Qn); said heating system (4) being provided for heating a plasma in the plasma vessel (20); said heat transfer system (6) being provided for transporting away heat from the heat source (60) consisting of the plasma and for conducting it to a user system; said injection system (8) being provided for injecting a fuel into the plasma vessel (20); and said support system (7) being designed to support the plasma vessel (20).

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