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Doty

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- [54] DOR NMR SAMPLE SPINNER
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- [52] U.S. Cl. 324/321
- [58] Field of Search 324/321, 318, 300, 307

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[57] ABSTRACT

An NMR DOR sample spinner includes an inner-rotor that is driven by a radial-inflow microturbine at each end, supported radially by anti-whirl air bearings, and supported axially by thrust bearings at each end thereof. The DOR spinner further comprises an outer-rotor that houses the inner-rotor bearing and drive nozzles such that the inner-rotor axis is inclined with respect to the axis of the outer-rotor at an angle of typically 30.56°. The outer-rotor is driven by a radial-inflow microturbine at each end, supported radially on anti-whirl air bearings, and supported axially by thrust bearings at each end thereof. The outer-rotor further comprises ceramic bearing races at each end that hold the sample drive nozzles in place. The outer microturbines are screwed to the outer-rotor and hold the bearing races in place. Drive and bearing gas for the inner-rotor is supplied through slip-fit, precision axial tubes at each end of the outer-rotor. The rf magnetization coil surrounds the central region of the outer-rotor, and rf shield rings limit the axial extent of the rf magnetic field.

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34 Claims, 3 Drawing Sheets

