CLAIMS

1. Compressor system comprising a compressor unit and a motor unit arranged on bearings, where motor and bearings are submerged in a cooling, lubricating and barrier liquid enclosed in a housing having a cooling arrangement and a circulation arrangement, wherein the motor unit is a permanent magnet motor unit.

2. Compressor system according to claim 1, wherein the compressor and motor operates at same speed.

3. Compressor system according to claim 1 or 2, wherein the compressor unit is a radial centrifugal unit.

4. Compressor system according to one of the preceding claims, wherein the circulation arrangement comprises a circulation impeller attached to the rotor of the motor.

5. Compressor system according to one of the preceding claims, wherein the cooling arrangement comprises a cooling unit arranged in a fluid loop arranged in relation to the housing.

6. Compressor system according to one of the preceding claims, wherein the cooling arrangement comprises a cooling unit arranged at the wall of the housing.

7. Compressor system according to one of the preceding claims, wherein the system comprises pressure means adapted to provide a pressure in the liquid within the housing at a pressure at or above the pressure of a process fluid at the outlet of the compressor unit.

8. Compressor system according to one of the preceding claims, wherein there is arranged a balancing piston on the rotor of the system.

9. Compressor system according to one of the preceding claims, wherein the compressor unit and motor unit is arranged with a common rotor.

10. Compressor system according to one of the preceding claims, wherein the compressor unit is arranged as a back to back solution.

11. Compressor system according to one of claims 1 to 9, wherein the compressor unit is arranged as an in-line solution.