Claims

1. Rotor device for a vacuum pump, comprising

a rotor shaft (10) and

at least one rotor element (12) arranged on the rotor shaft (10),

characterized in that

the at least one rotor element (12) contains aluminum, titanium and/or CFK and the rotor shaft (10) contains chromium-nickel steel wherein the at least one rotor element (12) is arranged in the longitudinal direction of the rotor shaft.

2. Rotor device for a vacuum pump of claim 1, characterized in that the at least one rotor element (12) is made of aluminum, an aluminum alloy and/or high-strength aluminum.

3. Rotor device for a vacuum pump of claim 1, characterized in that the at least one rotor element (12) is made of titanium and/or a titanium alloy.

4. Rotor device for a vacuum pump of claim 1, characterized in that the at least one rotor element (12) is made of CFK.

5. Rotor device for a vacuum pump of one of claims 1-4, characterized in that the rotor shaft (10) contains a chromium-nickel steel with added sulfur, and, in particular, is made of a chromium-nickel steel with added sulfur.

6. Rotor device for a vacuum pump of one of claims 1-5, characterized in that the rotor shaft (10) contains a stainless steel alloy, which in particular is stainless steel X8CrNiS18-9.

7. Rotor device for a vacuum pump of one of claims 1-6, characterized in that the material pair is selected such that the at least one rotor element (12) can be fitted on the rotor shaft (10) at room temperature.

8. Rotor device for a vacuum pump of claim 6, characterized in that the rotor elements are formed as rotor discs (12).

9. Rotor device for a vacuum pump of claim 8, characterized in that at least one spacer element (24) is arranged between two of the rotor elements (12).

10. Vacuum pump, in particular a turbomolecular pump, comprising

a rotor device for a vacuum pump of one of claims 1-9,

the rotor shaft (10) being supported in a pump housing (14) by bearing elements (28),

a driving means (22) connected to the rotor shaft (10), and

at least one stator element (16) arranged in the pump housing (14).