**CLAIMS**

1. A detector of microwave radiation, comprising:
- a signal input (401) and a detector output (402),
- an absorber element (404) of ohmic conductivity, coupled to said signal input (401) through a first length of superconductor (405), and
- a variable impedance element (406), the impedance of which is configured to change as a function of temperature, coupled to said detector output (402) through a second length of superconductor (407),
**characterized in that**
- the detector comprises a heating input (408),
- the detector comprises a heating element (409) coupled to said heating input (408) through a third length of superconductor (410), and
- said absorber element (404), said variable impedance element (406), and said heating element (409) are coupled to each other through superconductor sections of lengths shorter than any of said first (405), second (407), and third (410) lengths of superconductor to allow hot electron diffusion between said absorber element (404), said variable impedance element (406), and said heating element (409) while blocking quasiparticle thermal transport of heat through said first (405), second (407), and third (410) lengths of superconductor.

2. The detector according to claim 1, comprising microwave filters (501, 502) along at least one of said first (405) and third (410) lengths of superconductor.

3. The detector according to claim 2, comprising a low-pass or band-pass microwave filter (502) along said third length of superconductor (410).

4. The detector according to claim 2 or 3, comprising a band-pass microwave filter (501) along said first length of superconductor (405).

5. The detector according to claim 4, wherein said band-pass microwave filter (501) along said first length of superconductor is controllable with regard to at least one of the middle frequency and width of its pass band.

6. The detector according to any of the preceding claims, wherein:
- said heating input is a first heating input coupled to a first end of said heating element (409), and comprises a first heating current lead (601) and a first voltage measurement connection (602), and
- said detector comprises a second heating input that is coupled to a second end of said heating element (409), and comprises a second heating current lead (603) and a second voltage measurement connection (604).

7. The detector according to any of the preceding claims, wherein:
- said absorber element (404) and said variable impedance element (406) have a common longitudinal axis, and
- said heating element (409) runs parallel to at least one of said absorber element (404) and said variable impedance element (406) with a perpendicular displacement therefrom.

8. The detector according to any of claims 1 to 6, wherein:
- said variable impedance element (406) has a longitudinal axis,
- said absorber element (404) and said heating element (409) form a pattern that is symmetrical with respect

to the longitudinal axis of said variable impedance element (406).

9. A detector arrangement for detecting microwave radiation, comprising:
- at least one detector (700) according to any of claims 1 to 8, and
- a resonance measurement circuit (702) configured to measure the resonance frequency of a tank circuit coupled to said detector output (402).

10. The detector arrangement according to claim 9, comprising:
- a heating current controller (703) configured to make a heating current of known magnitude flow through said heating input (408).

11. The detector arrangement according to claim 10, wherein:
- said heating input is a first heating input coupled to a first end of said heating element (409) in said detector (700), and comprises a first heating current lead (601) and a first voltage measurement connection (602), and
- said detector (700) comprises a second heating input that is coupled to a second end of said heating element (409) in said detector, and comprises a second heating current lead (603) and a second voltage measurement connection (604),
- said heating current controller (703) comprises a series coupling of a voltage source (606) and a ballast resistor (607), coupled across said first (601) and second (603) heating current leads, and
- said detector arrangement comprises a voltmeter (609) coupled across said first (602) and second (604) voltage measurement connections.

12. The detector arrangement according to claim 11, wherein:
- the detector arrangement is configured to calibrate the detector (700) by making said series coupling feed a calibrating current through said heating element (409) and measuring corresponding change in the resonance frequency of the tank circuit, and
- the detector arrangement is configured to measure changes in the resonance frequency of the tank circuit during detection of microwave radiation and to produce a measurement signal indicative of such changes.

13. The detector arrangement according to claim 11, wherein:
- the detector arrangement is configured to make said series coupling feed a compensating current through said heating element (409) in dependence with a feedback coupling to keep the resonance frequency of the tank circuit constant during detection of microwave radiation, and
- the detector arrangement is configured to produce a measurement signal indicative of the magnitude of said compensating current.