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**26.** A particle detector adapted for cryogenic use, comprising:

a transition-edge sensor comprising:

a substrate;

an aluminum/normal-metal bilayer disposed on said substrate, said bilayer comprising a first aluminum layer in contact with a first normal-metal layer, said bilayer having a superconducting state, a normal-conducting state and a transition region therebetween with transition temperature  $T_c$ ; and

a means for measuring superconducting transitions within said transition region;

wherein said substrate is a particle absorber.

**27.** The particle detector of claim **26** wherein said substrate is insulating or semiconducting.

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**28.** A particle detector adapted for cryogenic use, comprising:

a transition-edge sensor comprising:

a substrate;

an aluminum/normal-metal bilayer disposed on said substrate, said bilayer comprising a first aluminum layer in contact with a first normal-metal layer, said bilayer having a superconducting state, a normal-conducting state and a transition region therebetween with transition temperature  $T_c$ ; and

a means for measuring superconducting transitions within said transition region;

wherein said bilayer is a particle absorber.

**29.** The particle detector of claim **28** wherein said bilayer is meandering in shape.

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