

PHASE-CHANGE COOLING APPARATUS AND METHOD OF CONTROLLING THE SAME

[Document Name] ABSTRACT

A cooling system employing a phase-change cooling apparatus together with an air conditioner becomes complex and increases in cost if it is configured to maximize the efficiency of the entire cooling system;

5 therefore, a phase-change cooling apparatus according to an exemplary aspect of the present invention includes a heat receiving means for vaporizing refrigerant liquid stored and producing refrigerant vapor by receiving heat exhausted from a heating section having breathed in cold air; a heat radiation means for liquefying the refrigerant vapor and

10 producing refrigerant liquid by radiating heat of the refrigerant vapor to cooling air by a fan; a vapor tube connecting the heat receiving means to the heat radiation means, the refrigerant vapor mainly flowing through the vapor tube; a liquid tube connecting the heat receiving means to the heat radiation means, the refrigerant liquid mainly flowing through the liquid

15 tube; and a control means for controlling a rotation rate of the fan, wherein the control means controls the rotation rate of the fan so that a vapor temperature that is a temperature of the refrigerant vapor may approach an intake-air temperature that is a temperature of the cold air.

[FIG.1]