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## **Pengembangan Sistem Pendinginan Thermoelectric dan Heat Pipe pada Prototipe Kotak Sampel Darah Portabel**

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The malnutrition is a chronic epidemic and commonplace spreads mostly at the suburb area and rural. Recently, it emerges because of the unmonitored nutrient's growth for the society living in these areas. Taking the blood sample is a common method to observe this epidemic, especially anemia. These samples are taken from the societies living at cities, suburbs, and rural areas. This must be supported by good blood storages to avoid the blood's destruction and to generate the accuracy of test's results at the laboratory. The common storage is an ice box that uses iced pack as a cooler mediator. Unfortunately, some shortcomings of this ice boxes -as the blood carrier- are their high dependency on the iced pack -that firstly must be cooled at a refrigerator/cooler-, not exactly measured of its cold endurance, and the limited capacity to keep the optimum temperature, about 4-6<sup>0</sup>C. The objective of this research is to develop a blood carrier cooled by double peltier element and heat pipe in order to follow the standard procedure of blood transportation. The developed blood carrier can transport 50 tubes @ 3ml. The developed prototype was tested and the result showed that the cabin's temperature could reach the desired temperature in short time. The blood carrier may facilitate researchers to get the well-maintained blood sample especially from the suburbs and rural areas. Basically, this result might also properly be used for the research of mammalian, viruses, and others medical purposes.