

Cooling Capacity Improvement of Magnetic Heat Pump for Railway Air Conditioner

Yoshiki MIYAZAKI Koichiro WAKI

Katsutoshi MIZUNO Kazuya IKEDA

Present air conditioner systems are based on traditional vapor compression technology with HCFC (Hydro Chloro Fluoro Carbon). The Kyoto Protocol has designated HCFC as one of the gases whose emissions are to be reduced. This requires the development of HCFC free systems or the usage of substances which have little greenhouse effect. Under those situations, magnetic refrigeration technology which has the potential for high efficiency without Freon gases is the focus of attention. The aim of this study is to develop a large-scale magnetic refrigerator which has a maximum kilowatt-class cooling power for air-conditioners mountable on railway vehicles so as to be free from Freon gases.