Scientists discover potential sustainable energy technology for the household refrigerator
28 March 2019

"The evaporating temperature of the refrigeration cycle depends only on the freezer temperature and appropriate reduction of the evaporator area in the fresh food compartment will not decrease the overall efficiency," explained Cao.

"Most families need one or two refrigerators and they are always on 24 hours a day, 365 days a year. That wastes a lot of energy. Even if we can save a little energy, that helps the human race be more energy-efficient," said Cao.

Cao and his team hypothesized that using part of the cold loss to cool the fresh food compartment could be a promising solution in improving the efficiency of the refrigerator. They describe their findings in the Journal of Renewable and Sustainable Energy.

"Energy efficiency of a normal refrigerator is affected by the heat-insulating property of the thermal barriers of the freezer. This is due to its low inner temperature," explained Jingyu Cao at the University of Science and Technology of China. "There is a significant difference in temperature between the freezer of a traditional refrigerator and ambient air temperature and the normal thermal barrier of the freezer causes considerable cold loss."

Cao and his team hypothesized that using part of the cold loss to cool the fresh food compartment could be a promising solution in improving the efficiency of the refrigerator. They describe their findings in the Journal of Renewable and Sustainable Energy.

Cao and his team hypothesized that using part of the cold loss to cool the fresh food compartment could be a promising solution in improving the efficiency of the refrigerator. They describe their findings in the Journal of Renewable and Sustainable Energy.
