Refrigeration + Heat Pump Processes Substance Input Energy Input Processes with Refrigerants Solid State based Processes Thermo-Thermo-Thermo-Vapour processes Gas processes electric magnetic elasto processes processes processes Adiabatic **Deforming** Snow and Thermal **Steam** Philips-Vortex **Peltier Evaporative** Freezing-Mechanical Air-Demagnetization Stirling-Ice from compression jet **Pulsations Elastocaloric**

cooling

Nature

mixtures

compression

Sorption

cooling

cycle

others

cycle

Ettinghausen

Magnetocaloric

Materials

compiled by Dr. Rainer M. Jakobs June 2017

materials