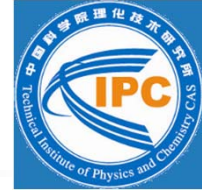


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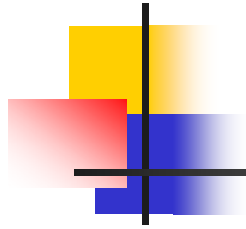


Cryogenic Theory

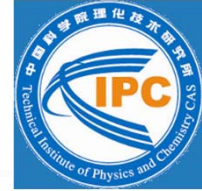
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Questions



1. At very low temperature, most physical properties of working fluids and solid materials will change a lot. Please give more than 4 examples for working fluids and solid materials, respectively.
2. Today you have learned some knowledge of helium refrigerators / liquefiers. Please answer the following questions: 1) What thermodynamic cycle is a standard helium refrigerator / liquefier based on and what are the characteristics for this cycle? 2) Indicate each process in the T-s diagram and draw the theoretical flow-process diagram, 3) What are the main components of the refrigerator / liquefier? Indicate these components to the corresponding process in the T-s diagram.