Meissner Effect :

In 1993 Meissner and Ochsenfeld observed that when a long superconductor is cooled in a magnetic field below the value of transition temperature , then at transition the lines of induction are pushed out of the specimen of the superconductor Shown in Fig 1 . This phenomenon is known as Meissner effect .

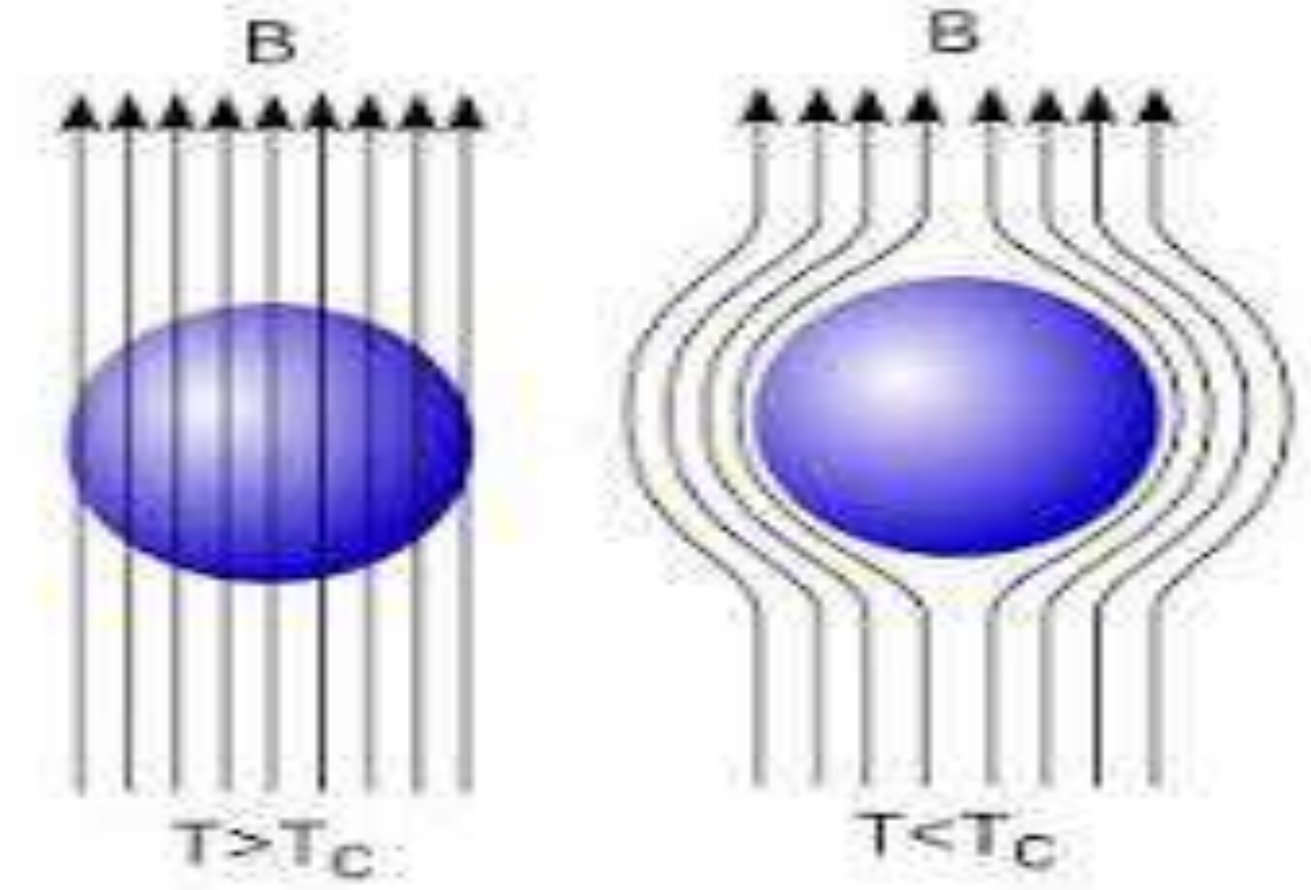
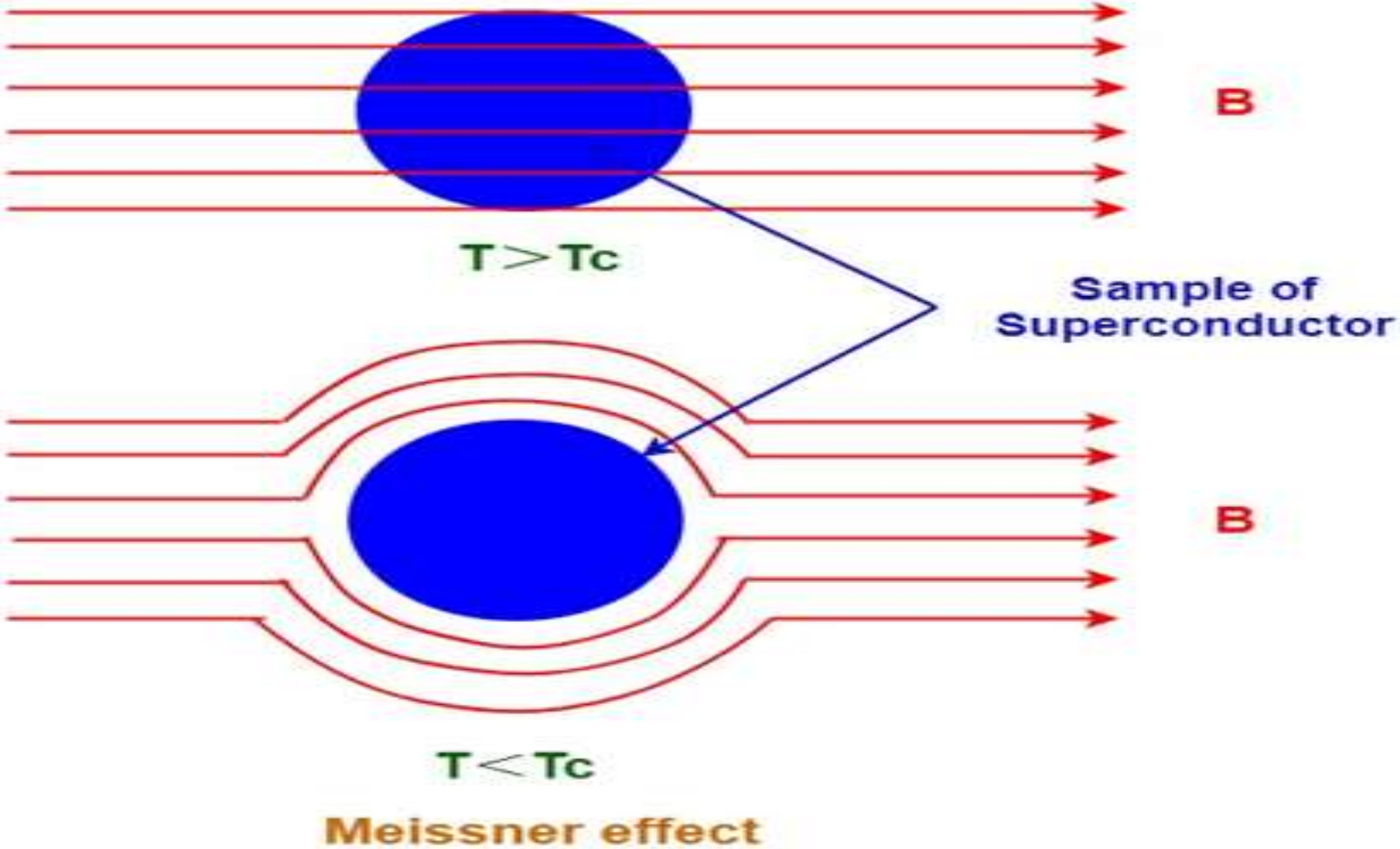


Fig 1.(a) Normal state (b) Super conducting state



Meissner effect

Meissner and Ochsenfeld demonstrated in the experiment on the superconducting cylinders that as the temperature is decreased to T_C ,

The magnetic flux originally present is completely expelled from the specimen , as the specimen becomes superconducting .

The expulsion of magnetic flux continues for $T<T_C$. According to them this effect is reversible

The expulsion of magnetic flux continues for $T<T_C$. According to them this effect is reversible i,e,

if the temperature is increased from below T_C the magnetic flux suddenly penetrates the specimen when the temperature becomes greater than Tc and the material comes in the normal state .