

Plasma and Bose- Einstein Condensate:

Plasma and Bose- Einstein Condensate are two more states of matter apart from three other discussed previously.

Scientists now say that there are actually five states of matter: Solid, Liquid, Gas, Plasma and Bose- Einstein Condensate.

Plasma

- Plasma is a mixture of free electrons and ions. Plasma occurs naturally in the stars (including the sun).
- Inside the stars, the temperature is so high that the atoms break up. Some of the electrons break away from the atoms converting the rest of atoms into electrically charged particles called ions. This mixture of free electrons and ions in a star is called plasma.
- The sun and other stars glow because of the presence of plasma in them.
- Plasma can also be made on the earth by passing electricity through gases at very low pressure taking in a glass tube. The fluorescent tubes and neon sign bulbs form plasma when they are switched on.

Bose- Einstein Condensate

In 1920 Indian physicist Satyendra Nath Bose had done some calculations for a fifth state of matter. Building on it calculations, Albert Einstein predicted a new state of matter- the Bose Einstein Condensate (BEC).

The BEC is formed by cooling a gas of extremely low density (about one –hundred-thousandth the density of normal air) to super low temperature.