‘New state of matter’ discovered

A file photo of the Los Alamos National Laboratory. | Photo Credit: AFP

Scientists have discovered a potential new state of matter that may help explain phenomena like superconductivity.

Superconductivity is extensively used in magnetic resonance imaging (MRI), particle accelerators, magnetic fusion devices, and microwave filters.

Researchers from the Los Alamos National Laboratory in the U.S. showed that among superconducting materials in high magnetic fields, the phenomenon of electronic symmetry breaking is common.

The ability to find similarities and differences among classes of materials with phenomena such as this helps establish the essential ingredients that cause novel functionalities such as superconductivity.

The high-magnetic-field state of the heavy fermion superconductor CeRhIn5 revealed a state in which the material’s electrons aligned in such a way to apparently reduce the symmetry of the original crystal, something that now appears to be universal among unconventional superconductors.

Unconventional superconductivity develops near a phase boundary separating magnetically ordered and magnetically disordered phases of a material.

The study was published in the journal *Nature*.

A study of nearly 300 people living in different parts of India found that nine single-base variants (single-nucleotide polymorphisms or SNPs) account

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