

**GOVERNMENT OF INDIA  
ATOMIC ENERGY  
LOK SABHA**

UNSTARRED QUESTION NO:2183  
ANSWERED ON:05.03.2003  
FINDINGS OF STUDY TEAM  
PRIYA RANJAN DASMUNSI

**Will the Minister of ATOMIC ENERGY be pleased to state:**

- (a) whether a seven number team from Tata Institute of Fundamental Research, Mumbai and the Institute of Plasma Research, Gandhinagar recorded huge short duration Magnetic Spice in Atoms in a sample hit by an intense Laser shot;
- (b) if so, whether such behaviour has any bearing on areas like futuristic non-storage systems and switching devices for high Magnetic fields; and
- (c) if so, the details thereof?

**Answer**

THE MINISTER OF STATE IN THE MINISTRY OF PLANNING, MINISTER OF STATE IN THE MINISTRY OF STATISTI  
PROGRAMME IMPLEMENTATION, MINISTER OF STATE IN THE DEPARTMENT OF ATOMIC ENERGY AND MINISTI  
STATE IN THE DEPARTMENT OF SPACE (SHRI S.B. MOOKHERJEE)

- (a) Yes, Sir. The efforts of the Indian Team have been acknowledged to be the first in the world.
- (b) Yes, Sir.
- (c) One of the ways of storing information is to divide it into `bits` and `write` these bits in a magnetic tape or disc. To increase the speed of storage and retrieval, we can apply gaint magnetic pulses that can realign the domains ina rapid manner. The Indian Study shows such a possibility, whereby the magnetic tape can be attached to the target where magnetic pulse is created. The magnetic pulses, however, need to be made much larger and their duration much shorter than has been achieved so far; higher laser intensities than presently available to the Indian Team are mandatory for further success. This Indian Team has had a head start in this area and access to higher laser intensities will help it make an impact in this and other applications of strategic importance for the country, such as futuristicscion acceleration and propulsion systems.