

## **Role of extremophile red alga *Galdieria sulphuraria* in bio-removal of hazardous industrial wastes of red mud and CFL bulbs containing Rare Earth Elements (REEs)**

**Anjali Singh**

Laboratory of Cell Cycle, Institute of Microbiology, CAS, Centre Algatech

Rare earth elements (REEs) are a group of 17 chemical elements which includes yttrium (Y), scandium (Sc) and a series of 15 lanthanides. REEs have identical physical and chemical properties whereas they rather have unique magnetic and catalytic properties. This unique magnetic and catalytic properties of REEs make them desirable in every electrical, electronics, laser, glass, magnetic material, energy technologies industries, aquaculture and agriculture. Due to increased demands of REEs and monopoly over the price and their supplies, exert a pressure to all other industrialized countries to look for an alternative to fulfill their demand in ecofriendly manner. Bio-removal of waste containing REEs and their recycling can be a solution to this problem, balancing both environmental and economic benefits. Prompted by the above lacuna, this study is focused on the use of extremophilic red algae *Galdieria sulphuraria* for bio-removal of REEs from hazardous industrial wastes of red mud and CFL bulbs and study their physiological response affected by these stresses.