

Nirupama Mallick: BIO-SKETCH

Prof. Mallick's research career began with the development of an **algal tool** for biomonitoring of metal toxicity in aquatic ecosystem, and demonstration of an '**exclusion mechanism**' for Cu-tolerance in the cyanobacterium, *Anabaena doliolum*. She has also developed a **hypothetical mechanistic model** to explain the tolerance of microalgae against metals and acidification. While working as Principal Investigator in **DST Young Scientist Scheme**, she first time demonstrated the synthesis of '**phytochelatins**' in diazotrophic cyanobacteria. She has also studied the metal biosorption potential of various microalgae with reference to recovery of precious metals. Under the **Alexander von Humboldt Fellowship**, she has explored the '**nitric oxide biosynthesis pathway**' in microalgae.

At IIT Kharagpur, Prof. Mallick's research group has generated excellent data on the production of **biodegradable films (polyhydroxyalkanoates)** from cyanobacteria. She has also developed a **recirculatory aquaculture system (RAS)** to treat the aqua-discharges with microalgae and cyanobacteria, and simultaneously producing various value-added products. Her group has successfully developed a low-cost process for extraction of **C-phycoyanin**, a natural colorant with enormous pharmaceutical properties, from cyanobacterial biomass. Currently, her group is actively engaged in **microalgae-biofuel** research. Aiming for an '**Algal Refinery**', they have developed simultaneous extraction protocols for various high-value products, viz. **biodiesel, bioethanol, glycerol, β -carotene, astaxanthin, PUFAs and the protein-rich spent biomass as aqua-feeds.**

Prof. Mallick has been credited with **95 research papers** in peer-reviewed international journals with **citations crossing over 3000 and a h-index 27, and i10-index 66** (source: Google Scholar). Her research team has been honored with the prestigious **General Electric Ecomagination Challenge award 2010** for their unique algal bioreactor model named '**BioPyramid**'. She has been elected to the fellowship of the **Indian National Science Academy (INSA)** in 2015. Her research paper has also been listed in the **Top Publications Category** in the latest **DST Ranking (April 2016)**.