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Sequential separation of high value products from microalgae

Algal biomass is a repository for multiple high value products. A wide diversity of microalgal members viz., *Spirulina platensis*, *Dunaliella salina*, *Phaedodactylum tricornatum*, *Isochrysis galbana*, *Haematococcus pluvialis*, *Cryptocodinium cohnii*, *Nannochloropsis salina* accumulate intracellular products such as pigments, polysaccharides, carotenoids, poly-unsaturated fatty acids and triglycerides in abundance. However, in a typical algal bioprocess, a predominant product is targeted while other less concentrated value added products are left unexploited. Therefore, designing a viable process for value added products require sequential processes to be adopted with either a single or a consortium of algal species. Selective solvent extraction processes are practiced in the recovery of the aforesaid products with high initial purity. Some of the key issues to be resolved in the design of sequential processes include biomass selection; biomass fortification; reconstitution of biomass surface area and cross-contamination of desired products. The present work highlights various micro algal products, their abundance, recovery methods and design criteria for purification of products. Also, the work validates few process examples that can be adopted in prospective algal bio-refineries.

Biography

Ronda Srinivasa Reddy is a group head for Center for Bioprocess Technology at KL University, Andhra Pradesh, India. He did his doctoral research at Institute of Chemical Technology, Mumbai, India. He has published more than 50 papers in reputed journals and has been serving as an editorial board member for reputed journals. He is a recipient of SERC Young Investigator award, UGC Research Award and he is a principal investigator for DST, DBT sponsored projects.

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