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## Sustainable utilization of seaweeds

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Marine seaweeds (or macro-algae) comprise a considerable part of the littoral biomass. In Egypt, the macroalgae are self-grown on the craggy surface near to the seashore of the Mediterranean and Red Seas, where accumulation of these species creating environmental problems. Seaweeds are multicellular plants growing in salt or fresh water. They are often fast growing and can reach sizes of up to 60 m in length. Macro-algae are known as a highly nutritive food containing vitamins (A & C), protein, mineral, fiber contents, and essential fatty acids, so their utilization in food or pharmaceutical sectors will be profitable. Although the industrial purposes of seaweeds, 90% of marine algae in Japan are marketed for human consumption. Bioethanol production has recent attention worldwide as an alternative to petroleum-derived fuels and macro-algae is suggested to be a promising feedstock for bioethanol commercialization as they contain 50% carbohydrates, 7-38% minerals and 10-47% proteins. This research summarizes the present state of seaweeds applications industrially and proposed schematic plans for best utilization pathways of macro-algae obtaining zero waste estate and sustainable environment.

## Biography

Hassan I El Shimi is PhD Candidate and works as Researcher and Assistant Lecturer in Chemical Engineering Department, Cairo University, Giza, Egypt. He has completed MSc in 2013 from Faculty of Engineering, Cairo University. His current research field is biodiesel/bioethanol production from microalgae and sustainable feedstocks with economic view and wastewater treatment. He has published more than 7 papers in reputed journals and conferences. He is also a member in the Federation of Arab Engineers.

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