

## ELECTRIC PROPULSION FOR NEAR COASTAL SHIPS

\*NOURHAN I. GHONEIM<sup>1</sup>, MOHAMMAD REZA ZAFARI ANARAKI<sup>2</sup>, MOHAMED  
SHOUMAN<sup>3</sup>, KAMBIZ MOKHTARI<sup>4</sup>

<sup>1</sup>Assistant Professor, International Maritime College Oman IMCO, Sultanate of Oman

<sup>2</sup>Lecturer, International Maritime College Oman IMCO, Sultanate of Oman

<sup>3</sup>Assistant Professor, Marine Engineering Technology Department, Arab Academy for Science,  
Technology and Maritime Transport, Egypt.

<sup>4</sup>Assistant Professor, International Maritime College Oman IMCO, Sultanate of Oman

### ABSTRACT

*The increase in the fuel costs all over the world and in Oman, caring for air and sea against pollution by fossil fuels and the increase of health issues caused by the excessive noise produced by the internal combustion engines and safety enhancement in the shipping industry are the main reasons have encouraged us to investigate a new source of power for near coastal ships within Sultanate of Oman.*

*Replacement the fuel tanks of these ships by rechargeable Lithium-ion batteries that can be charged fast and safely and also replacement the engines by low voltage reversible Alternative Current, AC. motors which are able to deliver different ranges of speed and power to the propeller.*

*Also, the ship is able to be equipped with a solar cell; the solar energy can charge the batteries or rotate the electric motor directly. Each square meter of the commercial solar cell is able to provide 100W of electricity. Sunny weather of Oman is a good incentive to achieve that.*

**KEYWORDS:** Fishing, Electric Propulsion, Oman, Coastal Ships

**Received:** Jul 27, 2020; **Accepted:** Aug 17, 2020; **Published:** Sep 28, 2020; **Paper Id.:** IJNADEC20201

<sup>1</sup> Assistant Professor, International Maritime College Oman IMCO, Sultanate of Oman

<sup>2</sup> Lecturer, International Maritime College Oman IMCO, Sultanate of Oman

<sup>3</sup> Assistant Professor, Marine Engineering Technology Department, Arab Academy for Science, Technology  
Maritime Transport, Egypt.

<sup>4</sup> Assistant Professor, International Maritime College Oman IMCO, Sultanate of Oman