

Title (en)

Dual mode oscillating foil propulsion system and method for oscillating at least one movable foil

Title (de)

Oszillierendes Dualmodus-Folienantriebssystem und Verfahren für die Oszillation mindestens einer beweglichen Folie

Title (fr)

Système de propulsion de feuille oscillante à double mode et procédé permettant de faire osciller au moins une feuille mobile

Publication

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Application

EP 14178280 A 20140724

Priority

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Abstract (en)

The present invention concerns an oscillating foil propulsion system (1) comprising at least one movable foil (2,3), at least one pitch mechanism connected to the at least one movable foil (2,3) and configured to control a pitch motion of the at least one movable foil (2,3), at least one heave mechanism connected to the at least one movable foil (2,3) and configured to control a downstroke heave motion and an upstroke heave motion of the at least one movable foil (2,3), and wherein the at least one pitch mechanism is configured to control a pitch angle of the at least one foil (2,3) such that a thrust force and a drag force are obtained during a downstroke heave motion, and the at least one pitch mechanism is configured to control a pitch angle of the at least one foil (2,3) such that an induced drag force during an upstroke heave motion is substantially smaller than the drag force during the downstroke heave motion. The invention further concerns a method for oscillating at least one movable foil (2,3).

IPC 8 full level

B63H 1/37 (2006.01)

CPC (source: EP)

B63H 1/37 (2013.01)

Citation (applicant)

- GB 1092839 A 19671129 - VICTOR NORMAN DAVIES
- J. MATTHEIJSENS; J.-P. MARCEL; W. BOSSCHAERTS; D. LEFEBER: "Oscillating foils for ship propulsion", NATIONAL CONGRESS ON THEORETICAL AND APPLIED MECHANICS; BRUSSELS, 9 May 2012 (2012-05-09)
- H. YAMAGUCHI; N. BOSE: "Oscillating Foils for Marine Propulsion", THE INTERNATIONAL SOCIETY OF OFFSHORE AND POLAR ENGINEERS, 1994

Citation (search report)

- [XAI] WO 02055381 A2 20020718 - CID INC [US], et al
- [XA] EP 2470781 A2 20120704 - OSCILLATING FOIL DEV B V [NL]
- [XAI] L SCHOUVEILER ET AL: "PERFORMANCE OF FLAPPING FOIL PROPULSION", JOURNAL OF FLUIDS AND STRUCTURES, vol. 20, no. 2005, 5 May 2005 (2005-05-05), pages 949 - 959, XP055162078
- [XAI] YONGHUI HU YONGHUI HU ET AL: "Development and control of dolphin-like underwater vehicle", 2013 AMERICAN CONTROL CONFERENCE, 13 June 2008 (2008-06-13), pages 2858 - 2863, XP055151631, ISSN: 0743-1619, ISBN: 978-1-47-990177-7, DOI: 10.1109/ACC.2008.4586927

Cited by

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