

Table of Contents

SOME ASPECTS OF EDF MODELLING AND TESTING ACTIVITIES, WITHIN ITS MARINE CURRENT ENERGY RESEARCH AND DEVELOPMENT PROJECT <i>Abonnel, C.; Achard, J.; Archer, A.; Buvat, C.; Guittet, L.; Lénès, A.; Maître, T.; Maniati, M.; Peyrard, C.; Renaud, T.; Violeau, D.</i>	1
NON-LINEAR AND VISCOUS DIFFRACTION RESPONSE OF OWC WAVE POWER PLANTS <i>Alves, M.; Sarmiento, A.</i>	11
OPTIMAL LATCHING CONTROL OF AWAVE ENERGY CONVERTER <i>Babarit, A.; Clément, A. H.</i>	19
ELECTRICAL ENGINEERING ASPECTS OF OCEAN ENERGY CONVERTERS <i>Bard, J.; Schmid, J.; Caselitz, P.; Giebhardt, J.</i>	27
WAVE-CURRENT INTERACTIONS IN MARINE CURRENT TURBINES <i>Barltrop, N.; Grant, A.; Varyani, K. S.; Pham, X. P.</i>	33
EXPERIMENTALLY VALIDATED NUMERICAL METHOD FOR THE HYDRODYNAMIC DESIGN OF HORIZONTAL AXIS TIDAL TURBINES <i>Batten, W. M. J.; Bahaj, A. S.; Molland, A. F.; Chaplin, J. R.</i>	39
INVESTIGATION OF PHASE-CONTROLLED WAVE-POWER BUOY <i>Bjarte-Larsson, T.; Falnes, J.</i>	47
A HIGH RESOLUTION MODEL OF THE ENGLISH CHANNEL FOR TIDAL STREAM RESOURCE ASSESSMENT <i>Blunden, L. S.; Bahaj, A. S.</i>	51
THE C-WAVE WAVE ENERGY EXTRACTION SYSTEM <i>Budd, C. A.</i>	59
WAVE ENERGY CONVERTER PERFORMANCE STANDARD: "A COMMUNICATION TOOL" <i>Burger, M. F.; Gelder, P. H. A. J. M.; Gardner, F.</i>	65
DESIGN AND INITIAL TESTING OF A CONTRA-ROTATING TIDAL CURRENT TURBINE <i>Clarke, J. A.; Connor, G.; Grant, A. D.; Johnstone, C. M.</i>	73
THE SEAREV WAVE ENERGY CONVERTER <i>Clément, A. H.; Babarit, A.; Gilloteaux, J.; Josset, C.; Duclos, G.</i>	81
TIME DOMAIN MODEL OF THE AWS WAVE ENERGY CONVERTER <i>Costa, J. S.; Sarmiento, A.; Gardner, F.; Beirão, P.; Brito-Melo, A.</i>	91
MODELING OF ENERGY EXTRACTION FROM TIDAL CURRENTS <i>Couch, S.; Sun, X.; Bryden, I.</i>	99
AWS PILOT PLANT TESTS: WAVE CHARACTERISTICS <i>Cruz, J. M. B. P.; Sarmiento, A. J. N. A.; Gardner, F.</i>	105
MODELLING AND CONTROL OF OSCILLATING-BODY WAVE ENERGY CONVERTERS WITH HYDRAULIC POWER TAKE-OFF AND GAS ACCUMULATOR <i>Falcão, A. F. O.</i>	113

ROLLING OSCILLATOR WITH HYDRAULIC RAM PUMP <i>Farley, F. J. M.</i>	121
A LINEARIZED MODEL FOR ESTIMATING THE PERFORMANCE OF SEA WAVE ENERGY CONVERTERS (REWEC) <i>Filianoti, P.; Camporeale, S. M.</i>	125
THE PERFORMANCE OF A WAVE ENERGY CONVERTER IN SHALLOW WATER <i>Folley, M.; Whittaker, T.; Henry, A.</i>	133
PROGRESS WITH MARINE CURRENT TURBINES <i>Fraenkel, P. L.</i>	141
LEARNING EXPERIENCE OF AWS PILOTPLANT TEST OFFSHORE PORTUGAL <i>Gardner, F. E.</i>	149
OPTIMIZATION OF POWER TAKE-OFF EQUIPMENT FOR AN OSCILLATING-WATER COLUMN WAVE ENERGY PLANT <i>Gato, L. M. C.; Justino, P. A. P.; Falcão, A. F. O.</i>	155
EXPERIMENTAL EVIDENCE FOR SIGNIFICANT UNDERPRESSURE IN THE VENTILATED BLUFF BODY WAKE EMPLOYED AS THE EXHAUST AREA OF A SEA CURRENT TURBINE <i>Georgiou, D. P.</i>	163
THEORETICAL ANALYSIS OF THE WAVE ROTOR – OSCILLATING WATER COLUMN COMBINATION <i>Georgiou, D. P.</i>	169
DEVELOPMENT OF THE SOUTH WEST WAVE HUB <i>Gillanders, K.; Harrington, N.; Taylor, A.</i>	175
VISCOUS WAVE SIMULATION USING ADAPTING QUADTREES <i>Greaves, D.</i>	183
PRELIMINARY RESULTS FROM ANALYTICAL AND NUMERICAL MODELS OF A VARIABLE-PITCH VERTICAL-AXIS TIDAL CURRENT TURBINE <i>Gretton, G.; Bruce, T.</i>	189
EXPERIMENTS AT ISLANDSBERG ON THE WEST COAST OF SWEDEN IN PREPARATION OF THE CONSTRUCTION OF A PILOT WAVE POWER PLANT <i>Gustafsson, S.; Svensson, O.; Sundberg, J.; Bernhoff, H.; Leijon, M.; Danielsson, O.; Eriksson, M.; Thorburn, K.; Strand, K.; Henfridsson, U.; Ericsson, E.; Bergman, K.</i>	197
A CHANGING CLIMATE FOR WAVE ENERGY <i>Harrison, G. P.; Wallace, A. R.</i>	203
BUOYANT WEC PERFORMANCE EVALUATION FOR THE 6TH WAVE ENERGY AND TIDAL ENERGY CONFERENCE <i>Holmes, B.; Barrett, S.; Walsh, T.</i>	209
DYNAMIC TIDAL POWER (DTP) <i>Hulsbergen, K.; Steijn, R. C.; Hassan, R.; Klopman, G.; Hurdle, D.</i>	215
TOWARDS DESIGN STANDARDS FOR WEC MOORINGS <i>Johanning, L.</i>	223

THE OWEL WAVE ENERGY CONVERTER AS A PLATFORM FOR COMBINED WAVE AND WIND POWER GENERATION <i>Kemp, J.; Derrick, A.; O'Nians, J.; Upadhyay, D.</i>	231
POWER CONTROL AND CONDITIONING FOR WAVE ENERGY CONVERTERS <i>Kiprakis, A. E.; Wallace, A. R.</i>	237
CREST LEVEL OPTIMIZATION OF THE MULTI LEVEL OVERTOPPING BASED WAVE ENERGY CONVERTER SEAWAVE SLOT-CONE GENERATOR <i>Kofoed, J. P.; Osaland, E.</i>	243
SIMULATION OF THE MOTIONS OF THE MCCABE WAVE PUMP SYSTEM <i>Kraemer, D. R. B.</i>	251
REFLECTORS TO FOCUS WAVE ENERGY <i>Kramer, Morten; Frigaard, Peter</i>	259
DEVELOPMENT OF A SHORELINE OPERATING WAVE ENERGY CONVERSION PLANT <i>Lemonis, G.; Tsiolis, S.; Ioannou, A.; Kladas, A.; Kimoulakis, N.; Mavrakos, S.; Stassinopoulos, A.; Papathanassiou, V.</i>	267
CEODOURO PROJECT: OVERALL DESIGN OF AN OWC IN THE NEW OPORTO BREAKWATER <i>Martins, E.; Ramos, F. S.; Carrilho, L.; Justino, P.; Gato, L.; Trigo, L.; Neumann, F.</i>	273
A TIME-DOMAIN MODEL OF A FLOATING BODY USING TRANSFORMS <i>McCabe, A. P.; Bradshaw, A.; Widden, M. B.</i>	281
DEVELOPMENT OF A DESIGN TOOL FOR TIDAL CURRENT TURBINES <i>McCan, G.; Rawlinson-Smith, R.</i>	289
IRISH WAVE POWER ATLAS 2005 <i>McCullen, P.</i>	295
COMPARISON OF POWER CAPTURE IN IRREGULAR WAVES AND THEIR REGULAR WAVE COMPONENTS <i>Meadowcroft, J. A. C.; Stallard, T. J.; Baker, N. J.</i>	305
A NUMERICAL STUDY OF THE OWSCWAVE POWER DEVICE USING A TWO-FLUID FREE SURFACE CODE <i>Mingham, C. G.; Qian, L.; Causon, D. M.; Ingram, D. M.</i>	313
DEVELOPING A RESEARCH ROUTE MAP FOR MARINE RENEWABLE ENERGY TECHNOLOGY IN THE UK <i>Mueller, M.; Wallace, R.</i>	321
FLEXIBLE FLOATING STRUCTURES PROVIDING FOR BOTH COASTAL PROTECTION AND WAVE ENERGY EXPLOITATION AND THEIR INTEGRATION IN COASTAL MANAGEMENT SYSTEMS <i>Mylonas, E. M.; Vordonis, A.; Vouros, C.</i>	329
AQUABUOY HOSE-PUMPS - THEORY AND EXPERIMENTAL RESULTS <i>Nielsen, K.; Forsberg, J.; Gillyon, I.; Weinstein, A.</i>	337
ASSESSMENT OF A COMBINED OFFSHORE RENEWABLE ENERGY RESOURCE FOR IRELAND <i>Nolan, G.; Ringwood, J.</i>	345

TESTING OF A PROTOTYPE FIXING SYSTEM FOR TIDAL TURBINES <i>Owen, A.; Bryden, I. G.</i>	353
HYDRODYNAMIC MODELLING OF A GENERIC POWER TAKE-OFF MECHANISM REACTING AGAINST WATER INERTIA <i>Payne, G. S.</i>	359
POTENTIAL OF DIGITAL DISPLACEMENT HYDRAULICS FOR WAVE ENERGY CONVERSION <i>Payne, G. S.; Stein, U. B. P.; Ehsan, M.; Caldwell, N. J.; Rampen, W. H. S.</i>	365
PELAMIS WEC - RECENT ADVANCES IN THE NUMERICAL AND EXPERIMENTAL MODELLING PROGRAMME <i>Pizer, D. J.; Retzler, C.; Henderson, R. M.; Cowieson, F. L.; Shaw, M. G.; Dickens, B.; Hart, R.</i>	373
THE IEA OCEAN ENERGY SYSTEMS IMPLEMENTING AGREEMENT: ITS STATUS AND FUTURE PROSPECTS <i>Polaski, K.; Brito-Melo, A.</i>	379
ARCHIMEDES WAVE SWING LINEAR PERMANENT-MAGNET GENERATOR SYSTEM PERFORMANCE <i>Polinder, H.; Damen, M. E. C.; Gardner, F.; Prado, M. G. S.</i>	383
OPTIMIZING OWC SITTING IN THE NEARSHORE <i>Pontes, M. T.; Cândido, J.; Henriques, J. C. C.; Justino, P.</i>	389
THEORETICAL ANALYSIS OF THE AWS DYNAMICS DURING SUBMERSION OPERATION <i>Prado, M. G. S.; Gardner, F.</i>	395
AWS RESULTS OF PILOT PLANT TESTING 2004 <i>Prado, M. G. S.; Neumann, F.; Damen, M. E. C.; Gardner, F.</i>	401
NORTH AMERICAN WAVE AND TIDAL COLLABORATIVES <i>Previsic, M.; Bedard, R.; Hagerman, G.; Thresher, R.; Robinson, M.; Calvert, S.</i>	409
A TEST-BED FOR ADVANCED CONTROL OF WAVE ENERGY CONVERTERS <i>Price, A. A. E.; Mundon, T. R.; Murray, A. F.; Wallace, A. R.</i>	413
SCENARIO-BASED ANALYSIS OF THE IMPACT OF MARINE ENERGY DEVELOPMENT ON SCOTLAND'S ELECTRICITY NETWORK <i>Ramsay, D.; Elders, I.; Ault, G.; McDonald, J.</i>	421
ECONOMIC REASONING AND PUBLIC FINANCING OF WAVE ENERGY <i>Regina, V.; Neumann, F.; Sarmiento, A. J. N. A.</i>	429
A PURPOSE-DESIGNED VESSEL FOR THE INSTALLATION OF WAVE POWER DEVICES <i>Salter, S.</i>	437
STANDARDIZING WAVE ENERGY RESOURCE DATA <i>Saulnier, J. M. G.; Pontes, M. T.</i>	443
PERFORMANCE PREDICTION OF A COMBINED WELLS-DARRIEUS ROTOR WITH MODEL TESTS AND A COMPUTATIONAL VORTEX MODEL <i>Scheijgrond, P. C.; Schaap, A.; Sustronk, B. J.; Versteegh, J. R.; Rossen, E. A.</i>	451
CERTIFICATION OF OCEAN CURRENT TURBINES <i>Schwartz, S.; Argyriadis, K.</i>	455

WELLS AND IMPULSE TURBINES IN AN OWC WAVE POWER PLANT: A COMPARISON <i>Scuotto, M.; Falcão, A. F. O.</i>	463
THE MARINE CURRENT POWER PROJECT AT THE SWEDISH CENTRE FOR RENEWABLE ELECTRIC ENERGY CONVERSION <i>Segergren, E.; Nilsson, K.; Sundberg, J.; Leijon, M.</i>	471
WAVEPLANE IN A BIGGER WAVE SPECTRUM AND SMALLER EXPLOITATION AREA <i>Skaarup, E.</i>	475
THE RESULTS OF TWO YEARS TESTING IN REAL SEA OF WAVE DRAGON <i>Soerensen, H. C.; Friis-Madsen, E.; Christensen, L.; Kofoed, J. P.; Frigaard, P.; Knapp, W.</i>	481
FULL-SCALE TESTING OF PM LINEAR GENERATOR FOR POINT ABSORBER WEC <i>Stalberg, M.; Waters, R.; Eriksson, M.; Danielsson, O.; Thorburn, K.; Bernhoff, H.; Leijon, M.</i>	489
ENVIRONMENTAL QUESTIONS RELATED TO POINT-ABSORBING LINEAR WAVE- GENERATORS: IMPACT, EFFECTS AND FOULING <i>Sundberg, J.; Langhamer, O.</i>	493
ESTIMATING WAVE ENERGY IN SCOTTISH WATERS FROM HINDCAST DATA <i>Taylor, J. R. M.; Motion, A. G.</i>	501
DESIGN AND TESTING FOR NOVEL JOINT FOR WAVE REFLECTORS <i>Tedd, J.; Friis-Madsen, E.; Frigaard, P.</i>	509
ON THE HYDRODYNAMICS OF OSCILLATING WATER COLUMN (OWC) WAVE POWER DEVICE <i>Thiruvenkatasamy, K.; Sato, M.</i>	515
THE ADVANTAGES OF DUCTED OVER UNDUCTED TURBINES <i>Thorpe, T.</i>	523
THE NEED TO ESTABLISH REGION-SPECIFIC ECONOMIC AND ENVIRONMENTAL DATA IN A CONSISTENT AND COMPATIBLE FORMAT <i>Turner, K.; Allan, G.; McGregor, P.; Swales, K.</i>	529
A PRELIMINARY NUMERICAL AND EXPERIMENTAL STUDY OF WAVE PREDICTION <i>Voronovich, V.; Holmes, B.; Thomas, G.</i>	535
AN EFFICIENT FLEXIBLE ENGINEERING TOOL FOR MULTI-PARAMETRIC HYDRODYNAMIC ANALYSIS IN THE DESIGN & OPTIMISATION OF WECS <i>Weber, J.; Thomas, G.</i>	543