



First International Conference on Technological Advances in Podded Propulsion

School of Marine Science and Technology,
University of Newcastle, UK
14th – 16th April 2004

Final Programme

As part of the EC Fifth Framework Project
“FASTPOD - Fast Ship Applications for Pod Drives”



DAY ONE

Wednesday 14th April

- 8.30 – 9.30 **REGISTRATION** – King’s Hall, Armstrong Building
- 9.30 – 10.00 **OPENING CEREMONY** – Robert Boyle Lecture Room, Armstrong Building
- Head of School Prof Atilla Incecik
 - T-POD Chairman Prof Mehmet Atlar

Session one

DESIGN TECHNOLOGY

Chairman: Dr David Clarke, University of Newcastle, UK

- 10.00 – 10.25 **FAST SHIP APPLICATION FOR POD DRIVES – FASTPOD PROJECT**
FASTPOD Partners, European Union
Presented by **Michael Woodward**, University of Newcastle, UK
- 10.25 – 10.50 **PARAMETRIC INVESTIGATIONS DESIGNED TO HELP FOCUSED POD TECHNOLOGY DEVELOPMENTS**
P.Goubault, J.Perree, Principia Marine, France
- 10.50 – 11.15 **HULL DESIGN AND OPTIMISATION WITH POD PROPELLERS WITH 5 AND 6 BLADES**
G.Bertaglia, G.Lavini, S.Scarpa, Fincantieri, Italy
- 11.15 – 11.45 **COFFEE BREAK** – King’s Hall

Session two

INNOVATIVE SOLUTIONS

Chairman: Gianpiero Lavini, Fincantieri, Italy

- 11.45 – 12.10 **NEW PODDED DRIVES FOR THE POWER RANGE OF 1-5 MW**
S.Kaul, SCHOTTEL, Germany
- 12.10 – 12.35 **RIM-DRIVE PROPULSION – IMPROVING RELIABILITY AND MAINTAINABILITY OVER TODAY’S PODS**
B.Van Blarcom, A.Franco, M.Lea, S.Peil, D.Thompson, P.van Dine, General Dynamics, Electric Boat, USA

12.35 – 13.00 **POD PROPULSION RESEARCH AND DEVELOPMENT AT THE ARL-PENN STATE**
J.E.Eaton, M.Billet, Applied Research Laboratory-Penn State University, USA

13.00 – 14.00 **LUNCH BUFFET** – King's Hall

14.00 – 14.30 **EMERSON CAVITATION TUNNEL** – Delegates are invited to tour the University cavitation tunnel facility (follow direction signs) where tunnel personnel will be available to answer your questions

Session three

MOTION RESPONSE

Chairman: Prof Atilla Incecik, University of Newcastle, UK

14.30 – 14.55 **OPERABILITY OF FAST PODDED ROPAX SHIPS IN ROUGH SEAS**
K.Sarioz, Istanbul Technical University, Turkey, **M.Atlar**, University of Newcastle, UK, **E.Sarioz**, Istanbul Technical University, Turkey, **M.D.Woodward, R.Sampson**, University of Newcastle, UK

14.55 – 15.20 **EFFECT OF PODS ON THE ROLL BEHAVIOUR OF PASSENGER VESSELS**
O.Turan, C.Tuzcu, D.Clelland, Z. Ayaz, SSRC, Universities of Strathclyde & Glasgow, UK

15.20 – 15.45 **MANOEUVRING ASPECTS OF POD-DRIVEN SHIPS**
Z. Ayaz, O. Turan, D.Vassalos, SSRC, Universities of Strathclyde & Glasgow, UK

15.45 – 16.15 **COFFEE BREAK** – King's Hall

Session four

ICE APPLICATIONS

Chairman: Björn Allenstrom, SSPA, Sweden

16.15 – 16.40 **FULL SCALE PERFORMANCE OF DOUBLE ACTING TANKERS "TEMPERA & MASTERA"**
N. Sasaki, Sumitomo HI, Japan; **J.Laapio, B.Fagerstrom**, Fortum Oil and Gas, Finland; **K.Juurmaa, G.Wilkman**, MARC, Finland

16.40 – 17.05 **DOUBLE ACTING TANKER – EXPERIENCES FROM MODEL TESTS AND SEA TRIALS**
P.Trägårdh, P.Lindell, SSPA, Sweden; **N.Sasaki**, Sumitomo HI, Japan

- 17.05 – 17.30 **MEASURING PODDED PROPULSOR PERFORMANCE IN ICE**
A.Akinturk, S.J.Jones, B.Rowell, D.Duffy, National Research Council, Institute for Ocean Technology, Canada
- 17.30 **End of technical sessions day one**
- 17.45 **Coach departs for the “Discovery Museum” trip – from King’s Walk**
Delegates are asked to meet at King’s Walk (follow direction signs) where coaches will transfer you to the Discovery Museum for the Conference Reception
- 18.00 – 20.00 **Tour of “Discovery Museum” – Conference Reception**
Day one reception will be hosted at Newcastle’s premier museum ‘Discovery’. At the museum, Mr. Ian Whitehead will present the historical steam launch “Turbinia”; famed as the first steam turbine propelled ship as developed by Sir Charles Parsons. Further, the original cavitation tunnel used by Parsons to develop the Turbinia will be on display.
- 20.00 – 20.15 **Coaches will drop-off delegates at the key hotels used by the conference delegates**

DAY TWO

Thursday 15th April

Session five

Reynolds Averaged Navier-Stokes (RANS) Applications

Chairman: Prof Jan Andrew Szantyr, Technical University of Gdansk, Poland

- 08.30 King's Hall open to receive delegates
- 9.10 - 09.35 **ON THE HYDRODYNAMIC DESIGN OF PODDED PROPULSORS FOR FAST COMMERCIAL VESSELS**
A.Sánchez-Caja, J.V.Pylkkanen, VTT Industrial Systems, Finland
- 09.35 – 10.00 **NUMERICAL SIMULATIONS OF FLOWS AROUND A SHIP WITH PODDED PROPULSOR**
K.Ohashi, T.Hino, National Maritime Research Institute, Japan
- 10.00 – 10.25 **ON A PROPULSION PREDICTION PROCEDURE FOR SHIPS WITH PODDED PROPULSORS USING RANS-CODE ANALYSIS**
I.A.Chicherin, M.Lobatchev, A.V.Pustoshny, Krylov Shipbuilding Research Institute, Russia, **A.Sánchez-Caja**, VTT, Finland
- 10.25 – 10.50 **FLUCTUATING PRESSURE DISTRIBUTION ON POD**
F.Deniset, J-Y.Billard, R.Jaouen, Institut de Recherche de l'Ecole Navale, France
J-M.Laurens, ENSIETA, France
- 10.50 – 11.20 **Coffee Break** – King's Hall

Session six

Contra-Rotating Propulsion

Chairman: Jürgen Friesch, HSVA, Germany

- 11.20 – 11.45 **ON THE DESIGN OF A SHAFTED PROPELLER PLUS ELECTRIC THRUSTER CONTRA-ROTATING PROPULSION COMPLEX**
V.A.Bushkovsky, I.Frolova, S.V.Kaprantsev, A.V.Pustoshny, A.V.Vasiljev, A.J.Jacolev, Krylov Shipbuilding Research Institute, Russia, **T. Veikonheimo**, ABB, Finland
- 11.45 – 12.10 **CALCULATION METHOD FOR THE STEERING FORCES OF A POD IN HYBRID PROPULSION**
P.Ruponen, J.Matusiak, Helsinki University of Technology, Finland

- 12.10 – 12.35 **STUDY ON THE POWERING PERFORMANCE EVALUATION FOR THE CRP-POD PROPULSION SHIPS**
G.Seokcheon, S.Heungwon , B.J.Chang, Hyundai HI, Korea
- 12.35 – 13.00 **PROPULSIVE PERFORMANCE OF A CONTRA-ROTATING PODED PROPULSOR**
Y.Ukon, K.Ohashi, J.Fujisawa, J.Hasegawa, NMRI, Japan
- 13.00 – 14.00 **Lunch Buffet** – King's Hall
- 14.00 – 14.30 Hydrodynamic Laboratory – Delegates are invited to tour the University Hydrodynamic Laboratory (follow direction signs) where tunnel personnel will be available to answer your questions

Session seven

Manoeuvring Loads

Chairman: Dr Noriyuki Sasaki, Sumitomo Heavy Industries, Japan

- 14.30 – 14.55 **INVESTIGATIONS ABOUT THE FORCES AND MOMENTS AT PODED DRIVES**
H.J.Heinke, Potsdam Ship Model Basin (SVA), Germany
- 14.55 – 15.20 **PRELIMINARY RESULTS OF TESTING ON THE DYNAMICS OF AN AZIMUTHING PODED PROPULSOR RELATING TO VEHICLE MANOEUVRING**
J.W.Stettler, F.S.Hover, M.S.Triantafyllou, Massachusetts Institute of Technology, USA
- 15.20 – 15.45 **A COMPARISON OF THE STOPPING MODES FOR POD DRIVEN SHIPS**
M.D.Woodward, M.Atlar, D.Clarke, University of Newcastle, UK
- 15.45 – 16.15 **Coffee Break** – King's Hall

Session eight

Manoeuvring Response

Chairman: Prof Kuniharu Nakatake, Kyushu University, Japan

- 16.15 – 16.40 **OPEN WATER EXPERIMENTS WITH TWO POD PROPULSOR MODELS**
M.Grygorowicz, J.A.Szantyr, Gdansk University of Technology, Poland
- 16.40 – 17.05 **MANOEUVRABILITY TESTS OF A VESSEL WITH POD PROPULSION**
L.Kobylnski, Foundation for Safety and Environment Protection, Poland

- 17.05 – 1730 **SELECTED ASPECTS OF POD PROPULSOR WORK IN OPERATIONAL CONDITIONS**
J.Kanar, Ship Design and Research Centre – CTO, Poland
- 17.30 **End of technical sessions day two**
- 19.15 – 19.45 **Cocktail Reception – Council Chambers, Armstrong Building**
Delegates are invited to pre-Dinner drinks in the Council Chambers, adjacent to the main entrance of King’s Hall
- 19.45 – 20.30 **Music Recital – King’s Hall**
Gulsin & Erkin Onay perform for your listening pleasure a recital including works by Fazil Say and Johannes Brahms
- 20.30 – 22.30 **Conference Banquet – King’s Hall**

DAY THREE

Friday 16th April

Session nine

Operational Technology

Chairman: John Carlton, Lloyd's Register, UK

- 09.10 – 09.35 **CAVITATION AND VIBRATION INVESTIGATIONS FOR PODDED DRIVES**
J.Friesch, Hamburg Ship Model Basin, Germany
- 09.35 – 10.00 **PODDED RUDDERS**
A.Junglewitz, O.el Moctar, S.Franic, Germanischer Lloyd, Germany
- 10.00 – 10.25 **NUMERICAL MODEL FOR NAVAL POD**
J.F.Sigrist, C.Gervot, C.Laine, J.F.Le Bert, R. Barbarin, DCN Propulsion, France
- 10.25 – 10.50 **EXPERIENCE OF FESTIVAL CRUISES OPERATING POD DRIVEN SHIPS**
T.C.Kontes, C.Th. Kontes, Festival Cruises, Greece
- 10.50 – 11.20 **Coffee Break** – Music Library

Session ten

Experimental Technology

Chairman: Dr Jon Eaton, ARL Penn State, USA

- 11.20 – 11.45 **DESIGN OF A MODEL POD TEST UNIT**
A.MacNeill, Oceanic Consulting Corp, Canada
R.Taylor, S.Molloy, N.Bose, B.Veitch, Memorial University, Canada T.Randell,
P.Liu, NRC-IOC, Canada
- 11.45 – 12.10 **SYSTEMATIC GEOMETRIC VARIATION OF PODDED PROPULSOR MODELS**
S.Molloy, N.Bose, B.Veitch, R.Taylor, Memorial University, Canada
A MacNeill, Oceanic Consulting Corp., Canada
- 12.10 – 12.35 **NUMERICAL AND EXPERIMENTAL INVESTIGATION TOOLS FOR
PRELIMINARY DESIGN OF PODDED PROPULSOR COMPONENTS**
F.DiFelice, M.Felli, L.Greco, F.Pereira, F.Salvatore, C.Testa, INSEAN- Italian
Ship Model Basin, Italy
- 12.35 – 13.00 **EXPERIMENTAL INVESTIGATION OF FLOW FIELD AROUND A PODDED
PROPULSOR USING LDA**
D.Wang, M.Atlar, EJ Glover, I Paterson, University Newcastle, UK
- 13.00 – 14.00 **Lunch Buffet** – University Ballroom

- 14.00 – 14.25 **ON PROPULSIVE PERFORMANCE OF A SMALL BULK-CARRIER MODEL WITH TWIN PODDED PROPELLERS**
K.Nakatake, J.Ando, A.Yoshitake, Y.Sato, Kyushu University, Japan;
M.Tamashima, Fluid Techno Co., Japan
- 14.25 – 14.50 **NUMERICAL INVESTIGATION ON HYDRODYNAMIC PERFORMANCE OF PODDED PROPELLER**
M.Islam, R.Taylor, J.Quinton, B.Veitch, N.Bose, Memorial University, Canada
B.Colbourne, P. Liu, Institute for Ocean Technology, Canada
- 14.50 – 15.15 **RESEARCH ON HYDRODYNAMIC COMPUTATIONAL OF POD PROPULSION**
C.Ma, Z.Qian, Naval Research Centre, China; **C.Yang**, Shanghai Jiao Tong University, China; **X.Zhang, D. Du**, Naval Research Centre, China
- 15.15 **Conference Closing**

