BOGDAN GANEA

Naval Architect

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Dr Bogdan Ganea is employed as a Naval Architect at Safety at Sea Ltd since June 2008. Prior to that, he was a senior researcher of Icepronav (Shipbuilding Design and Research Institute) in Galați, Romania. His career spans over 30 years in the field of ship experimental and numerical hydrodynamics. He developed CFD code for steady and unsteady propeller calculation by boundary element method presented at the 22nd ITTC Propulsion Committee Propeller RANS/Panel Method Workshop, 5-6 April 1998, Grenoble. His experience includes also speed-power and manoeuvre sea trials conduct and data processing. Since 2009, he has been developing an in-house software for manoeuvring simulation, BBSIM – Brookes Bell Manoeuvring Simulator, which is deployed in numerous commercial projects for accident analysis and berthing / unberthing simulations under various environmental conditions. This code was also deployed in the SAFEPORT research project for ship trajectory optimization.

EDUCATION AND QUALIFICATIONS

1978	BSc. Mathematics/Informatics, "Al. I. Cuza" University, Iaşi, Romania.
1988	MSc. Naval Architecture/Engineering, Galați University, now "Dunărea de Jos" University, Galați, Romania.
1998	Ph.D., "Dunărea de Jos" University; Specialising in Ship Hydrodynamics and Ship Structures; Doctoral thesis on the marine propeller hydro-elasticity.
	Member of the Royal Institution of Naval Architects MRINA, CEng.
	Member of the Airship Association.
	Member of the Society of Computer Aided Engineering, Romania.

EXPERIENCE

June 2008 – Present	Safety at Sea Limited
	Naval Architect
	Ship manoeuvring simulation for ship owners shipyards and model basins in new buildings, conversions and litigation. Software development of in-house BBSIM code for manoeuvring. Assisting clients in areas of resistance/propulsion, sea-keeping and mooring analysis.
(March 2011 - May 2011) Strathclyde University Secondment	Associate Researcher
	Mathematical modelling of ship manoeuvring & trajectory optimisation with software implementation for the SAFEPORT project

1988 - 2008	Icepronav, Galați, Romania **Naval Architect/ Senior Researcher 1st Degree** Scientific research, mainly in ship hydrodynamics Technical software development for:- Propeller hydrodynamic calculation by boundary element method. Resistance & self-propulsion experimental data processing and full scale extrapolation. PMM manoeuvring experimental data processing and full scale extrapolation. Conducting ship hydrodynamics experiments (resistance & self-propulsion, manoeuvring), experimental data processing and reporting Conducting sea trials (speed-power, manoeuvring), measured data processing and reporting. Continuous updates on state-of-the-art literature and developments by participation in national and international scientific conferences.
May 1979 - June 1988	Icepronav, Galați, Romania **Mathematician** Technical software development, mainly in ship hydrodynamics, particularly for propulsion: Cavitation experimental data processing. Propeller geometry calculation/drawing. Model/full scale propeller manufacturing. Propeller strength calculation by means of finite element method.
October 1978 - April 1979	Galaţi Shipyard, Romania (now Damen Shipyard, Galați) **Mathematician** Mathematical modelling of production planning by applying graph theory.

August 1978 - September 1978 **Stânca-Costeşti Prut River Hydroelectric Plant**

Mathematician

Hydrologic measurement on Prut River and dam reservoir. Software for Prut River mass flow calculation.

SUMMARY OF DEVELOPMENT ACTIVITY

1. Cavitation experiment data processing and graphic presentation, 1981
2. Propeller geometry calculation and drawing, 1983-1985
3. Full scale & model propeller manufacturing code, 1985 – 1988
4. Wake data analysis and graphic presentation code, 1984-1985
5. Propeller strength calculation by finite element method, 1986-1988
6. Mitsubishi towing tank experiments data processing software upgrading, 1988-1991
7. Propeller design and ship speed performance prediction by using the Wageningen series, 1989 –1990
8. Potential flow past a fully immersed body calculation by boundary element method, 1991-1992
9. Potential free surface potential flow past a ship hull calculation by boundary element method, 1993-1994
10. Steady and unsteady propeller hydrodynamic calculation by boundary element method 1995 – 1997
11. Propeller hydroelastic quasi-static calculation by coupling the boundary element method (hydrodynamics) with the finite element method (structural), 1998
12. Propeller unsteady induced pressure and bearing forces calculation by boundary element method (non-cavitating regime), 1999
13. Azimuthing propeller calculation by boundary element method, 2000 – 2001
14. Planar motion mechanism (PMM) experimental data processing and ship manoeuvring ability prediction, 2002 – 2005
15. Resistance and self-propulsion experimental data processing for performance prediction according to ITTC'78 Method, 2006
16. BBSIM/MNSIM - ship manoeuvring simulation based on a modular model, 2009-present

MAIN PUBLICATIONS

1. Ganea, B – *Marine Propeller Strength Calculation by Means of Finite Element Method*, published in Technical Bulletin of Romanian Register of Shipping, no. 3/1991, pp. 3, Bucharest, Romania (in Romanian)
2. Ganea, B. – *Boundary Element Method in Marine Propeller Hydrodynamics*, HADMAR'91 Proceedings, Vol. 1, pp. 40, Varna, 1991
3. Florea, P. ; Ganea, B. – *The First Submersible Ships Designed at ICEPRONAV*, Design and Construction of the Ships, Armament and Military Equipment for the Navy's Scientific Session Proceedings, UM02190 Constanța, Oct. 1994, Vol. 1, pp. 74 (in Romanian)
4. Ganea, B. – *Ship Hull Free Surface Flow as a Free Boundary Problem*, presented in the International Workshop "Optimisation of Non-linear Systems and of Free Boundaries" July 29 - Aug 3 1996, "Ovidius" University, Constanța
5. Ganea, B. - *A Direct (Potential Based) Boundary Element Method for the Lifting Bodies Hydrodynamic Calculation*, presented at *ECMI'96 Conference*, 25-29 June 1996, Lyngby/Copenhagen, Denmark, published in ECMI'96 Proceedings, pp. 268/274, B.G. Teubner, Stuttgart, 1997
6. Novac, I.; Ganea, B.; Novac, C. – *Experimental and Theoretical Research for a Destroyer Class Ship Upgrading by Providing a Below Waterline Extended Bulb*, presented in the XV-th Scientific Session of the Professors, dedicated to the anniversary of 125 years of naval higher education, Constanța , November 5-7, 1997 (in Romanian)
7. Ganea, B., Ghioca, D., Leroux, D. – *Steady and Unsteady Marine Propeller Hydrodynamic Calculation by Means of the Direct Boundary Element Method*, presented at 22nd ITTC Propulsion Committee Propeller RANS/Panel Method Workshop, 5-6 April 1998, Grenoble, France, published in Proceedings pp. 273/282
8. Ganea, B. - *Marine Propeller Hydroelasticity by Means of the Finite/Boundary Element Method – A Preliminary Approach*, presented at *PRADS'98,* The 7th International Symposium on Practical Design of Ships and Mobile Units, 20-25 September 1998, The Hague, The Netherlands, published in Proceedings pp. 671/676
9. Ganea, B. – The Airships - A Choice for the Coast Guard Operations, presented in the XXX-th Scientific Session of the National Military Equipment and Technology Research Agency, Bucharest, Cercul Militar Național, November 26/27 1998 (published in proceedings, in Romanian)
10. Ganea, B.- *Kutta-Jukovski Condition and Wake Geometry in a Direct Boundary Element Method for the Lifting Body Hydrodynamic Calculation*, The Annals of the University 'Dunărea de Jos' of Galați, Fascicle XI Shipbuilding, Year XIX 2001, pp. 35/40
11. Țăposu, I.; Iorga, G.; Ganea, B. - *'Dolphin' Airfoil in Marine Engineering: Propeller and Rudder*, Black Sea 2004 Proceedings, vol 1, pp. 135/141, Varna, October 2004
12. Pîrvulescu, R.; Ganea B. - *Fast Support Ship Series for Safety and Security Improvement in Waterborne Transportation of a Risk Zone (Natural Disasters, War, Terrorism, etc.)*, CEEX Conference proceedings, vol. II, pp. L3-26, Braşov, October 2006 (in Romanian)
13. Barbos, M.; Cristescu, C.; Pîrvulescu R.; Ganea, B. - *Wireless Remote Control Steering Mechanism for Small Boats and Ships*, Revista Română de Automatică (The Romanian Automation Magazine), nr. 2, volum XX, iunie 2007, ISSN 1454-9077 (in Romanian)
14. Ganea, B. – *Ship Manoeuvring by PMM – Mathematics and Experiments*, Journal of Marine Technology and Environment, ISSSN:1844-6116,http://cmu-edu.eu/jmte/, Vol I, April 2010
15. Ganea, B.; York, P.; Pinto, C. – *Brookes Bell Manoeuvring Simulator (BBSIM)*, SEA-CONF 2015, 1st International Conference, "Mircea cel Bătrân" Naval Academy, 14th-16th May 2015, Constanța, Romania, ISSN-L 2457-144X
16. Ganea, B.; Dodworth, K. – *Propeller overload factors for the direct power method*, The Naval Architect, September 2017, pp 44/47

17. Ganea, B.; Dodworth, K. – *A power correction method for speed-power sea trials data analysis*, The Naval Architect, July/August 2018, pp 34/36