Gdańsk University of Technology **Faculty of Ocean Engineering and Ship Technology** **Doctoral studies offer for foreign PhD candidates** **Academic Year 2018/2019**

Politechnika Gdańska *Wydział Oceanotechniki i Okrętownictwa* *Studia doktoranckie - oferta SD dla kandydatów zagranicznych* *Rok akademicki 2018/2019*

	Faculty	**Academic dyscypline**	**Prospective supervisor**	**Contact details** / Dane kontaktowe			**Proposed titles of dissertations / Research interest or expertise** (max. 100 words)	**Language of the doctoral thesis**	**List of the supervisor's most important academic achievements published within the last 5 years** (max. 5 achievements)	**Number of commenced procedures for a doctoral degree**	**Number of PhD students under supervision**	**Achievements regarding supervision** (max. 3)
	Wydział	*Dyscyplina naukowa*	Opiekun naukowy	Email	Tel.	**Room** / pokój	*Proponowane tematy prac doktorskich / tematyka badawcza (max. 100 słów)*	*Język rozprawy doktorskiej*	*Wykaz najważniejszych opublikowanych osiągnięć z ostatnich 5 lat (max. 5 osiągnięć)*	*Liczba otwartych przewodów doktorskich*	*Liczba doktorantów pod opieką*	*Dotychczasowe osiągnięcia związane z opieką nad doktorantami (max. 3)*
1	Ocean Engineering and Ship Technology *Oceanotechniki i Okrętownictwa*	Mechanical Engineering *Budowa i Eksploatacja maszyn*	prof. dr hab. inż. **Czesław Dymarski**	cpdymars@pg.gda.pl	(58) 347 16 08	517	Equipment for the acquisition of submarine natural resources. Ship equipment and ocean engineering facilities. Hydraulic drive and control systems Devices for obtaining energy from renewable sources, including tides, currents and sea waves.	English or Polish	Four granted patents (PL218938, PL220325, P 225694 and ?) and one utility model (PT 66265). The head and contractor of grants (018588, 0180680), the contractor of three (N N524 469839, 020686 and MARTECII / 1/2014). Thirteen publications, incl. Dymarski C .: An integrated hydraulic drive system of a novel device for launching lifeboats from large passenger ship. Polish Maritime Research 1 (72) 2012,	0	3	Cooperate with the industry in the design of modern equipment especially for ships and ocean engineering
2	Ocean Engineering and Ship Technology *Oceanotechniki i Okrętownictwa*	Mechanical Engineering *Budowa i Eksploatacja maszyn*	prof. dr hab. inż. **Czesław Szymczak**, prof. zw. PG	szymcze@pg.edu.pl	(58) 3471746	320	Thin-walled structures, optimal design, sensitivity analysis	English or Polish	1) Buckling of thin-walled columns accounting for initial geometrical imperfections, Int. J. Non-Linear Mech. 2017, Szymczak , Kujawa 2) Distortional buckling of thin-walled columns of closed quadratic cross-section, Thin-walled Structures, 2017, Szymczak, Kujawa 3) On local buckling of cold-formed channel members, Thin-walled Struct., 2016, Szymczak, Kujawa 4) Numerical and experimental investigation of rotational stiffness of zed-purlins connection with sandwich panels, Thin-walled Struct., 2014, Kujawa, Szymczak 5) On stability behaviour of hin-walled columns accounting for initial geometrical imperfections, IACM-ECCOMAS Conf., Barcelona, 2014, Kujawa, Szymczak	0	0	x
3	Ocean Engineering and Ship Technology *Oceanotechniki i Okrętownictwa*	Mechanical Engineering *Budowa i Eksploatacja maszyn*	dr hab. inż. **Jerzy Głuch**, prof. nadzw. PG	jgluch@pg.gda.pl	(58) 347 2468	136	Energetics, turbomachinery, thermal and flow diagnostics	English or Polish	1. Project N N513 490039, number: 4900/B/T02/2010/39, Creation and investigation of fast 3D thermal and flow simulators of turbomachinery for reference states determination – Jerzy Głuch – Supervisor 2010-2013 2. Marta Drosińska-Komor, Jerzy Głuch, Method of of turbomachinery algorithms genetic for thermal and flow diagnostics of power units, Mat. Konf. Diagnostyka Procesów i Systemów, Sandomierz, 2017.09.10-13, 3. Jerzy Głuch, Justyna Ślęzak-Żołna, Anna Butterweck, Anna Grzymkowska, Natalia Szewczuk, Diagnostics of large power units, Mat. Polish-German Seminary Turbomachinery Workshop, Gdańsk, 2016.09.20-22, 4. Anna Butterweck, Jerzy Głuch: Application of spatial neural simulators of turbine blade rows to fluid flow diagnostics, Aktualne Zagadnienia Energetyki, T.1, s. 179-189, Ed. K. Wójs, A. Sitka , Wrocław 2014, ISBN 978-83-7493-872-3. 5. J. Głuch: Application of DCS systems to determination of border conditions for steam turbomachinery bodies, XI Konferencja NOWE KIERUNKI ROZWOJU MECHANIKI organizowana przez Polskie Towarzystwo Mechaniki Teoretycznej i Stosowanej, Koszalin 15-18 marzec 2015	6	6	x
4	Ocean Engineering and Ship Technology *Oceanotechniki i Okrętownictwa*	Mechanical Engineering *Budowa i Eksploatacja maszyn*	prof. dr hab. inż. **Wiesław Tarełko** prof. zw.PG	wietarel@pg.gda.pl	694 458 336	169	1. design methodology of vessel maintenance characteristics (maintainability, design for assembly) 2. safety of vessels (ship power plant operators, marine environment, specific purpose vessels) 3. management of operation and maintenance of the ship power plant (optimization of working parameters of marine propulsion system)	English or Polish	1. the academic title of professor granted by the President of the Polish Republic -2012 2. development of the scientific monograph entitled 'Methodology of design for operational and maintenance properties of complex technical objects '-a series of publishing in Library of Operation and Maintenance Issues – 2011 3. PhD thesis supervisor of Rudzki K.: Two-Objective Optimization of Engine Ship Propulsion Settings with Controllable Pitch Propeller Using Artificial Neural Networks -2014 4. publication of the scientific paper in journal Ocean Engineering 'A decision-making system supporting selection of commanded outputs for a ship's propulsion system with a controllable pitch propeller' (coauthor Rudzki K.) – 2016 5. appointment to the Technical Council of Polish Register of Shipping for 2016-2020 3. PhD thesis supervisor of Rudzki K.: Two-Objective Optimization of Engine Ship Propulsion Settings with Controllable Pitch Propeller Using Artificial Neural Networks -2014 4. publication of the scientific paper in journal Ocean Engineering 'A decision-making system supporting selection of commanded outputs for a ship's propulsion system with a controllable pitch propeller' (coauthor Rudzki K.) – 2016 5. appointment to the Technical Council of Polish Register of Shipping for 2016-2020	0	0	x

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5	Ocean Engineering and Ship Technology *Oceanotechniki i Okrętownictwa*	Mechanical Engineering *Budowa i Eksploatacja maszyn*	dr hab inż. **Wojciech Litwin** prof. nadzw. PG	wlitwin@pg.gda.pl	(58) 347-28-44	505	Tribology, Hybrid ship propulsion,	English or Polish	1. Kowalski J., Leśniewski W., Litwin W.: Multi-source-supplied parallel hybrid propulsion of the inland passenger ship STA.H. Research work on energy efficiency of a hybrid propulsion system operating in the electric motor drive mode ; Polish Maritime Research 3.2013 2. Litwin W. Olszewski A.: Water-Lubricated Sintered Bronze Journal Bearings —Theoretical and Experimental Research; Tribology Transactions 1 2014 3. Litwin W.: Experimental research on water lubricated three layer sliding bearing with lubrication grooves in the upper part of the bush and its comparison with a rubber bearing. Tribology International 82 (2015) 4. Litwin W. Properties comparison of rubber and three layer PTFE-NBR-bronze water lubricated bearings with lubricating grooves along entire bush circumference based on experimental tests. Tribology International 90 (2015) 5. Litwin W. Dymarski C.: Experimental research on water-lubricated marine stern tube bearings in conditions of improper lubrication and cooling causing rapid bush wear. Tribology International 95 (2016); 6. Litwin W., Matsuoka I., Hirata N.: Water lubricated main shaft bearings with three layer bush – modern solution for marine industry STLE Conference, Las Vegas USA 2016 7. Litwin W. Influence of local bush wear on water lubricated sliding bearing load carrying capacity. Tribology International (2016) 8. Ewa Piątkowska, Wojciech Litwin Attempt at Evaluating the Influence of Bending Stress on Shaft Wear Process in Water Lubricated Sliding Bearing with Rubber Bush; Tribologia I 2017 9. Paweł Gełesz, Artur Karczewski, Janusz Kozak, Wojciech Litwin, Łukasz Piątek Design methodology for small passenger ships on the example of the ferryboat MOTŁAWA 2 driven by hybrid propulsion system; Polish Maritime Research Special Issue 2017 S1 (93) 2017	0	3	1. Piątkowska E., Litwin W.: Attempt at Evaluating the Influence of Bending Stress on Shaft Wear Process in Water Lubricated Sliding Bearing with Rubber Bush// TRIBOLOGIA. -., nr. 1 (2017), s.81-86 2. Barszczewska A., Litwin W., Sadowski J.: Research on water lubricated main shaft bearings in conditions of improper lubrication and cooling conducted on high torque real-life scale bush test rig// World Tribology Congress 2017/ Pekin: , 2017, s.1-4 3. Kunicka M., Litwin W.: Projekt małego promu pasażerskiego z napędem hybrydowym – koncepcja napędu i wybrane problemy gospodarowania
6	Ocean Engineering and Ship Technology *Oceanotechniki i Okrętownictwa*	Mechanical Engineering *Budowa i Eksploatacja maszyn*	prof. dr hab. **Zygfryd Domachowski**	domachow@pg.edu.pl	(58) 347 2662	135	Turboset and power system frequency control, Environment aspects of energy conversion, Heat and power distributed generation	English or Polish	1. Supporting windpower within a separate electric power grid. In: Proc. The ASME Turbo-Expo 2011, 6-10 June 2011, Vancouver, Canada, Paper no. GT2011-46494 2. Regulacja automatyczna turbozespołów cieplnych. Wydawnictwo Politechniki Gdańskiej, Gdańsk 2014 3. Inlet air fogging of marine gas turbine in power output loss compensation. Polish Maritime Research, No 4(88), 2015, Vol. 22 4. Applicability analysis of inlet air fogging in marine gas turbine. In: Proc. The ASME Turbo-Expo 2017, 26-30 June 2017, Charlotte, USA, Paper no. GT2017-63580	9	0	x
7	Ocean Engineering and Ship Technology *Oceanotechniki i Okrętownictwa*	Mechanical Engineering *Budowa i Eksploatacja maszyn*	dr hab. inż. **Janusz Kozak** prof. nadzw. PG	kozak@pg.edu.pl	662 229 025	232	Technology of marine object manufacturing Fatigue strength of marine objects, Fracture resistance of metal structures, Design of small floating objects,	English, Polish and Russian	1. Kozak J., Niklas K.: The influence of core material on strength properties of hybrid sandwich panels// W : Developments in Maritime Transportation and Exploitation of Sea Resources/ ed. C. Guedes Soares, F. Lopez Pena London: Taylor & Francis Group, 2013, s.337-341 2. Niklas K., Kozak J.: The Influence of Modelling Material Zones on Strains and Stresses at Weld Toe Notch// Solid State Phenomena. -Vol. 224., (2015), s.187-191 3. Kozak J.: Inżynieria odwrotna w okrętownictwie // Mechanik. -., iss. 10 (2015), s.831-840 4. Kozak J., Kowalski J.: Problems of Determination of Welding Angular Distortions of T-fillet Joints in Ship Hull Structures// Polish Maritime Research. -Vol. 22., nr. 2 (86) (2015), s.79-85 5. Kozak J., The Influence Of Manufacturing Oversizing On Postwelding Distortions Of The Fillet Welded Joint, Polish Maritime Research ISSN: 1233-2585, (20.0) http://www.bg.pg.gda.pl/pmr/pmr.php, DOI 10.1515/pomr-2015-0072 6. Kozak J., Possibilities for assesment of the angular distortion in Welded T-joint, Czasopismo Mechanik ISSN: 0025-6552, http://dx.doi.org/10.17814/mechanik.2016.12.558 (11p) 7. Niklas K., Kozak J. Experimental investigation of Steel–Concrete–Polymer composite barrier for the ship internal tank construction Ocean Engineering 111 (2016) 449–460, Elsevier, doi:10.1016/j.oceaneng.2015.11.030 2016	1	4	Elaboration of 2 working version of doctoral thesis scope, During last 2 years - common papers and presentations: 2 papers in journals noted on Thompson list, 5 common presentations on conferencie

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8	Ocean Engineering and Ship Technology *Oceanotechniki i Okrętownictwa*	Mechanical Engineering *Budowa i Eksploatacja maszyn*	dr hab. inż. **Rafał Szłapczyński**, prof. nadzw. PG	rafal.szlapczynski@pg.edu.pl	(58) 347 27 45	506	Applying Artificial Intelligence methods to prediction, classification and optimization in marine navigation, including: • weather routing of ships using ensemble forecasts, • methods of assessing ship collision risk, • Collision Alert Systems (CAS), • detecting near-miss situations based on AIS data • analysis of ship traffic patterns based on AIS data, • determining and optimising ship collision avoidance manoeuvres and safe trajectories, • ship manoeuvres in severe weather, • optimising routes and manoeuvres of unmanned and autonomous vessels.	English or Polish	[1] Szłapczyński R., Evolutionary Ship Trajectory Planning in Restricted Visibility, 2015, Journal of Navigation, Vol. 68, no. 1, pp. 39-51 [2] Szłapczyński R., Szłapczyńska J. A Target Information Display for Visualising Collision Avoidance Manoeuvres in Various Visibility Conditions, 2015, Journal of Navigation, Volume 68, No 6, pp 1041-1055 [3] Szlapczynski, R., Szlapczynska, J., 2016. An analysis of domain-based ship collision risk parameters. Ocean Eng. 126. doi:10.1016/j.oceaneng.2016.08.030 [4] Szlapczynski, R., Szlapczynska, J., 2017. A method of determining and visualizing safe motion parameters of a ship navigating in restricted waters. Ocean Eng. 129. doi:10.1016/j.oceaneng.2016.11.044 [5] Szlapczynski, R., Szlapczynska, J., 2017. Review of ship safety domains: Models and applications. Ocean Eng. 145. doi:10.1016/j.oceaneng.2017.09.020			