



# SNAME NTUA

June 20, 2013

Vol. 1, Issue 5

www.sname.org/NTUA

## UPCOMING EVENTS

### • • 20 June Technical Meeting

19.00, Auditorium  
Maran Tankers, 354  
Syngrou Ave.,  
Kallithea

*"LNG Carriers an  
Update on  
Technology"*

*Speaker: Mr. Stavros  
Hatzigrigoris,  
Managing Director of  
Maran Tankers  
Management Inc.*

## NEWSLETTER STAFF

Eleni Lazaratou,  
*Section Senior  
Chair*

Dimitris Mytilinis  
*Outgoing Vice-  
chair*

Michael Pytharoulis,  
*Outgoing  
Secretary  
Treasurer*

Michalis Foteinos,  
*Section Chair*

Konstantina Stamou,  
*Section Vice-chair*

Ilias Soultanias,  
*Section Secretary-  
Treasurer*

## *Visit to Floating Naval Museum of Battleship "Georgios Averof"*

by Konstantina Stamou

On Saturday, 25<sup>th</sup> of May, at 13.00 in the afternoon, the SNAME NTUA Student Section carried out a scheduled visit to the Floating Naval Museum of the Battleship "Georgios Averof", in Phaleron Bay. The participation of our members was thirty people, a large number, especially considering that on 10<sup>th</sup> of June the exams period is going to start and all of the students are loaded with deadlines. In our visit, we were happily accompanied by Mr. Petros Lalangas, Manager of SNAME's European Regional Office and Secretary Treasurer of the Greek Section of SNAME.

This was the first trip that was organized by the SNAME NTUA Section and we are glad that students expressed excitement with the conducted tour that was carried out by people of the Greek Navy. We visited the accommodation of upper and lower decks in which we were informed about the everyday life and jobs of the crew. Later on, after obtaining special permission from the Officer, we visited the engine room in which are positioned both of



*All Aboard (Top) The student section was accompanied by Mr. Petros Lalangas on the Upper Deck of the Battleship "Georgios Averof", in Phaleron Bay. (Left) Students were treated to an informative presentation aboard.*

the Steam Engines which are the same model with these of the Titanic. More such visits are going to be scheduled for the next academic year and we hope that the participation will be strong again.

### **History of the B/S Averof**

The Averof battleship is the most decorated ship in the Greek Navy and it is converted to a floating museum.

Built in Italy and bought by the Greek government in 1909, this 10,000-ton armoured cruiser boasted the most modern weaponry of its time. It contributed greatly to the

success of the Greek fleet in the Aegean, and to the liberation of the Greek islands during the Balkan Wars of 1912 and 1913.

Participating in naval operations until 1944, the Averof was decommissioned in 1952 and remained in Poros until 1983, when it was moved permanently to Phaleron Bay. Today, this historic battleship has been converted into a naval museum, a moving memorial to Greece's heroic sailors and naval officers, and a proud symbol of the strong bond between the Greek people and the sea for thousands of years.

# ***Greek Presence in the Third International Symposium on Marine Propulsion***

by Vasileios Tsarsitalidis

The Australian Maritime College and the University of Tasmania welcomed experts from around the globe to Launceston for an international symposium dedicated to the design and hydrodynamics of all types of marine propulsors.

The 3rd International Symposium on Marine Propulsors was held at the Tramsheds Function Centre, Inveresk, from 5 – 8 May.

AMC Principal, Professor and SNAME author Neil Bose, said the event attracted 100 delegates from across Australia and as far afield as Asia, Europe and the United States.

“This year’s symposium continues the work presented in 2009 and 2011 in Europe into all aspects of hydrodynamic design of marine propulsors,” Professor Bose said.

“A highlight was the sessions on Ocean Renewable Energy and Renewable and Low Environmental Impact Propulsion. With ever-increasing transportation demands and the growing need for reduced carbon



footprints, it is imperative that we develop new and exciting ways to generate energy and minimise energy use for propulsion.

“I have no doubt that the work presented throughout this symposium will have resounding impact for many years to come.”

SMP 13 also included a mini symposium, the 3rd T-Pod - Technological Advances in Pod Propulsion, in which papers related to marine podded propulsors (those in which the propellers and their driving electric motors are placed in a pod below the hull of a ship) were presented.

NTUA was represented for third consecutive time by **Tsarsitalidis Vasileios** (PhD candidate) and **Ioannou Theodoros** (graduate student) with the papers “Double oscillating foils. Extending the series of biomimetic propulsors” and “Flexible Elliptic Oscillating Duct. Taking the FOD one step further”, both under Associate Professor **Politis Gerasimos**. Vasileios **Tsarsitalidis**, also chaired the session of biomimetic propulsion, which was widely accepted as successful and a promising future for the marine industry.

International cooperation was

encouraged and bonds were strengthened. The appointment for the fourth SMP was set for May 31-June 4, 2015, when (Our) Professor Spyros Kinnas, will organize the symposium in Austin Texas.

More details regarding past and future Symposia on Marine Propulsors can be found at <http://www.marinepropulsors.com/>.



# Germanischer Lloyd Young Professionals Award: Innovators for Efficiency

Reproduced from GL Group Press

At a ceremony held at the Nor-Shipping maritime exhibition in Oslo, classification society Germanischer Lloyd (GL) rewarded three young engineers for their outstanding scientific research with the GL Young Professionals Award.

As well as seeking out the best new research, the Awards aim to support the best young engineers in the Maritime field and to demonstrate how varied and exciting the engineering profession can be. This year's awards topic centred on a key area for the future of shipping, asking for theses which presented "Innovative Ideas to Increase the Efficiency of Ships and/or their Operation".

**Dr Pierre C Sames**, GL Senior Vice President and Head of Research and Rule Development presented the prizes, which range in value from 1,000 to 3,000 Euro to winners from Greece and Germany.

**Mr Lampros Nikolopoulos** of the National Technical University of Athens received the top honour and a first prize of €3,000 for his paper: "Holistic Methodology for the Optimization of Tanker Design and Operation and its Applications".

Second prize and with it an award of €2,000 was given to **Ms Eva Binkowski** from the University of Rostock for her paper: "Optimisation of a parametrically modelled containership for power taking into account predicted operational profiles".

**Mr Hannes Lindner** of the University of Rostock was awarded third prize and €1,000 for his paper "Verification and Validation of numeric towing test with a ship model free to trim and submerge".

With the GL Young Professional Award



**SNAME YP Winner Dr. Pierre C Sames, GL Senior Vice President and Head of Research and Rule Development, presents the award to top prize winner Mr. Lampros Nikolopoulos**



**Top Prizes From left to right: Mr Lampros Nikolopoulos (1st Prize—National Technical University of Athens), Ms Eva Binkowski (2nd Prize—University of Rostock) and Mr Lindner (3rd Prize—University of Rostock)**

Germanischer Lloyd (GL) supports continues to develop and retain newcomers to the industry as they build innovative young professionals. This was up their expertise, a vital part of the sixth time that GL has awarded this ensuring that the maritime sector prize.

# ***SNAME Student Work: Parametric modeling of cargo oil tanks, water ballast tanks and supporting piping system with use Autodesk Inventor***

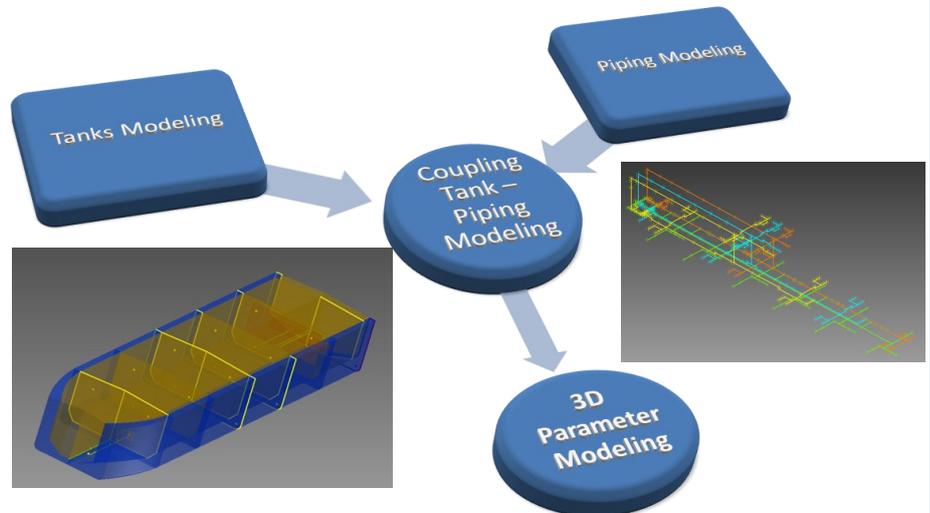
by Michael Pytharoulis

## ***Prologue***

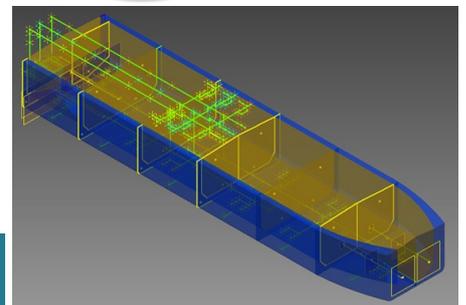
The present thesis deals with the way of developing three-dimensional models of water ballast tanks and cargo oil tank and also with the necessary piping system that supports the above mentioned tanks.

The modeling of the cargo oil tanks and the piping system have been developed in parametric way, so the redesign of the above can be achieved directly for any new and under construction (study) ship.

Within the boundaries of the correct parametric modeling, emphasis has been given in the coupling not only between the individual tanks, but also between the supplied piping systems, that allows their smooth operation. The reason for this particularity in the modeling is to secure that the order will remain correct even after changes in the parameters of the above models.



The development of three-dimensional models facilitates the control of the



## ***About the Author...***



Michael Pytharoulis is a Naval Architect and Marine Engineer having graduated from the National Technical University of Athens (NTUA) in 2013 and is associated member of SNAME, HIMT and RINA. His diploma thesis in “Parametric modeling of cargo oil tanks, water ballast tanks and supporting piping system with use of Autodesk Inventor” was presented on March 2013. He has been awarded with the ABS 2011 Student Award for his undergraduate study with subject “Preliminary Study of a Marine Diesel Power Plant”. He has been actively involved with SNAME as a member of the executive committee of the Greek Student Section as Vice-Chairman for the period 2011-2012 and as Secretary / Treasurer for the period 2012-2013.

His passion with naval architecture started back to his very childhood seeing a sailboat during a field trip with his family. Since then, he was been involved in the everyday maintenance of many sailboats including his own. He is currently employed in the consulting company HYDRUS Engineering Ltd. involved with new building plan approval projects, retrofit and design studies and on the preparation of operation manuals.

growing pattern from the perspective of the ergonomic study. The main advantage of the parametric model, which has been analyzed in the present thesis, is its ability to be rearranged and modified in a prompt and very easy way, even by software developing inexperienced users. Besides the above, an equally important advantage that this model provides to the user is the extracted information on accurate geometric data, like the volume, the center of gravity, the mass moments of inertia with respect to center of gravity of the model etc.

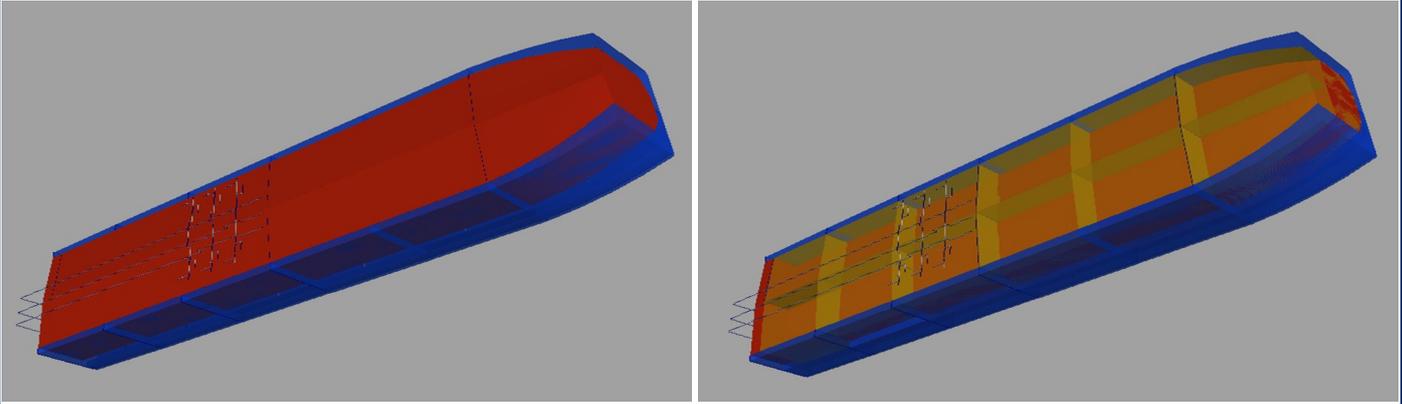
Based on the properties of the parametric model described above, the estimation of the final behavior of a vessel after an underlying retrofitting becomes feasible and very accurate.

The current thesis is part of the research program REFRESH, in which the Ship

*(Continued on page 5)*

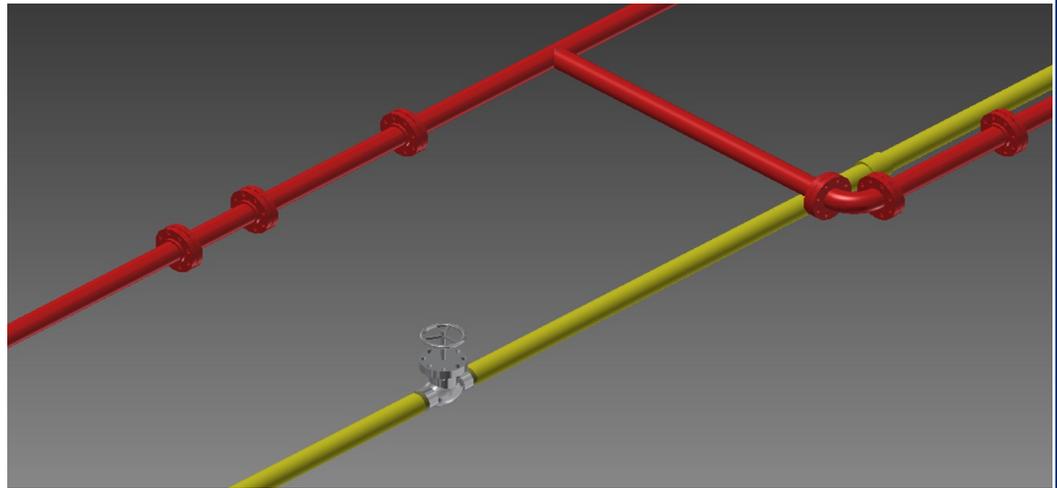
# SNAME Student Work: Parametric Modeling

(Continued from page 4)



**Above** Snapshot of the developed 3D parameter model of Tanker at the beginning (left) and at the 60% (right) of cargo discharging and ballasting. **Below** Detailed 3D modeling of the Water Ballast line (yellow) and the Cargo Oil line (red)

Design Laboratory was involved. Purpose of this research project is to upgrade the energy efficiency, both of existing vessels and new constructions. To achieve the ecological function of these ships, there is a study on the rearrangement of piping to minimize their losses and determine the optimum operating point of various machines installed on the ship (such as pumps, etc.).



**Thank you to the generous past and present sponsors of SNAME NTUA**



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