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Thematic Cluster on
Blue Growth and related Smart
Growth



ADRION THEMATIC CLUSTER ON BLUE GROWTH AND RELATED SMART GROWTH

NEORION AND SHIPmEnTT PROJECTS

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NEWSLETTER #3

August 2020

Message from Thematic Cluster Coordinator

We are happy to announce the third newsletter of the Adriatic Thematic Cluster (TC) on Blue Growth and related Smart Growth. The TC consists of 10 relevant projects funded under Ionian Adriatic framework with the ultimate goal to promote cooperation, and to identify common synergies and new ideas for the next EU programming period. One newsletter will be available for downloading each month in the **TC section**, with informative articles about Cluster's objectives, as well as updates on programs, contests, conferences, activities, and other-related news and articles.

This issue deals with the topic of green shipping/shipbuilding and was prepared by NEORION and SHIPmEnTT projects, as two of the members of TC, which altogether cover multiple and relevant aspects, as the green shipping concept (referred also as green sea mobility) mainly depends on green design. With the shipping industry entering a new, environmental-friendly areas, stakeholders in the maritime sector are seeking for ways to reduce ships' emissions. Already all EUSAIR countries shows great interest about the sectors, given though the the EU Sulphur Directive 2012/33/EC, and the turn into a new more environmental-friendly period. In this newsletter you can get to know the two relevant projects, their common and complementary research areas and objectives and find out about their recent activities. Any feedback is welcome and could be send in my personal e-mail or through the projects participating in Cluster. We hope that this newsletter will create new ways of sharing our knowledge and news with you. Let's work towards valuable outputs, contributing to the development of Blue economy in the Adriatic-Ionian region.

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NEORION at a glance

NEORION aims at establishing a transnational Cluster in the Adriatic-Ionian on Green Shipbuilding that will accelerate both the cooperation on key actors and innovation in the industry. As main outputs, the project aims at enhancing the innovation capacity of the sector, creating a sustainable shipbuilding ADRIAN Cluster, developing tools to favor the cooperation of SMEs with research institutions and provide action plans to both foster economic growth of the sector and benefit the regional business ecosystem, through actions targeted and initiated by representatives of the Quadruple Helix. The project partnership is composed by 8 scientific and institutional organizations from Greece, Italy, Croatia and Slovenia.

Participation of NEORION project in summer digital lectures “Knowing the Maritime Markets”

In the framework of dissemination activities, NEORION project and Prof. Nikitas Nikitakos participated in summer digital lectures “Knowing the maritime markets” and presented the NEORION project and the international best practices in green shipping technologies and applications.

The Isalos.net initiative in collaboration with University of the Aegean-Department of Shipping Trade & Transport (Greece) organized for 3rd consecutive year the summer digital lectures entitled “Knowing the maritime markets” from 7 to 30 of July 2020. The six lectures in total were conducted digitally, via the Zoom platform and consisted of six main sessions:

- Introduction to maritime economics: Tramp & Liner shipping
- Shipping markets: Freight market and used ships
- Shipping markets: Shipbuilding and shipbreaking
- Shipping financing: Methods & Strategies
- Short-sea shipping: the road towards 2030
- Operational ship management and maritime insurance

The third session of digital lectures entitled “Shipping markets: Shipbuilding and shipbreaking” was moderated by Prof. N. Nikitakos, who gave a detailed description of the new building process, design methodologies, stages of ship design, entities involved in the process, and gave special emphasis on green shipping and shipbuilding. All participants were informed about the expected trends and the available green shipping technologies and applications and had the possibility to ask questions to moderator and speakers in order to have a constructive dialogue with valuable results. The video from the lecture is available on the Isalos.net [You tube](#) channel (in Greek).

The objective of the green shipbuilding concept is to minimize the harmful emissions during design, manufacturing, service and laying up, in order to reduce the pollution to air, water and soil, save resources and improve economic and social benefits. The main concepts associated with this notion are the *green ship* and the *green shipyard*.

The green ship concept mainly depends on green design. Ships should be designed to enable them give the minimal effect on the environment during manufacturing and service. So, the keys to green design are the 3R:

- Reduce the conception of materials/energy and the pollution to the environment in ship manufacturing and service;
- Recycle the parts and accessories in ship maintenance;
- Reuse the majority of materials after ship laying up.

The green shipyard, on the other hand shall ensure the high efficiency of materials and energy in shipbuilding, reduce the harmful emissions and smoothen the process of integrated hull construction, outfitting and painting.

ΘΕΡΙΝΕΣ ΨΗΦΙΑΚΕΣ ΔΙΑΛΕΞΕΙΣ ΝΑΥΤΙΛΙΑΣ

Καθ. Νικόλαος Νικητάκος
Πανεπιστήμιο Αιγαίου

Σταύρος Χατζηγηρύνης
Maran Gas Maritime Inc.

Ευάγγελος Σφακιωτάκης
TMS Tankers Ltd.

Green shipbuilding technologies

Green shipbuilding technologies

Green ship concept

How to Make the Ultimate GREEN SHIP ?

Χορηγοί Θερινών Διαλέξεων

Χορηγός Επικοινωνίας

International Best Practices in Green Shipbuilding Technologies & Applications

- **No ballast system:** ballast water convention by IMO focuses on reducing the transit of sediments and microorganisms of one territory to another through the ballast of ships. Plans of making a “No ballast ships” are under progress, since a no ballast ship or similar system can drastically reduce this problem.
- **LNG fuel for propulsion:** Liquefied Natural Gas is perceived as the optimal fuel in the shipping industry for the future, since it helps in reducing pollution from ships, especially in the air, and a combination of LNG fuel with diesel oil will lead to efficient engine performance, resulting in fuel saving.
- **Sulphur Scrubber System:** Reducing sulphur or SOx emission from the exhaust, is a solution that will be used extensively in the future. This can be achieved by installing an exhaust gas scrubber system wherein the sulphur is washed out from the exhaust gas of the engine resulting in reduction of SOx up to 98% along with other harmful particles.
- **Speed nozzle:** are generally used in small supply vessels and tugs to provide power to the ships. Along with new design features of merchant vessels, they can improve the propulsion efficiency of the ship by saving power up to approx. 5%.
- **Hull paint:** applying correct paint at correct hull area can reduce the frictional resistance of the ship resulting in 3-8% of fuel savings.
- **Sail & kite propulsion system:** when used along with the conventional propulsion system can reduce the fuel as well as NOx, SOx and CO2 emissions by a significant amount. The system utilizes wind assisted propulsion by flying a gigantic kite from the bow of a ship using the traction developed by the kite to assist in pulling the ship through the water.
- **Fuel & solar cell propulsion:** utilizes power from a combination of fuel cells, solar cells and battery systems. This helps in reduction of GHG emission to a great extent. Recently, many technologies have come which support the big ships to reduce fuel consumption by utilizing solar panels and rigid sails.
- **Sandwich plate system:** it is a process of composting two metals plate by bonding it with polyurethane elastomer core. This avoids usage of steel hence makes the structure light weight and less prone to corrosion.

- **3-D Printing technology:** further developments in this process can lead the industry to use this technique to build complex geometries of ship like bulbous bow easily. The prospect of using 3-D printers to seek quick replacement of ship's part for repairing purpose is also another interesting concept.
- **Shipbuilding robotics:** recent trends suggest that shipbuilding industry is recognizing robotics as a driver of efficiency along with a method to prevent workers from doing dangerous tasks such as welding, blasting, heavy lifting, etc. The shortage of skilled labour is also one of the reasons to look upon robotics.

More info on NEORION at: <https://neorion.adrioninterreg.eu/>

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SHIPmEnTT at a glance

The SHIPMENTT project aims at establishing an innovation ecosystem focused on the green sea mobility sector (referred partially as green shipping in EUSAIR) across the ADRION area. In the medium-term, the aim is to enhance the investments in regional R&D and increase the competitiveness of the local SMEs.

Today, the innovation activity in the region is fragmented and confined to the national borders allowing limited space for regional cooperation and economic growth. SHIPMENTT will establish a network of cooperating parties with a clear plan to shape the necessary conditions for a fruitful blue growth innovation ecosystem in the spirit of transnational cooperation. Hence, the project features partners from all 8 countries of the ADRION area.

SHIPMENTT meets with Advisory Board to refine policy recommendations

During the project meeting in Trieste in late February, the project launched the first round of consultation with its advisory board. The Advisory Board is body composed of Associated partners, linked with SHIPmEnTT consortium members. Associated partners are organizations and institutions, dealing in different fields related to the key SHIPmEnTT topics such as: intellectual property rights, technology transfer, blue growth and maritime issues, education, support to business sector. The objective of the consultation was to consider the impact of the implemented pilot actions in ADRION area and provide suggestions and recommendations for SHIPmEnTT consortium on how to integrate developed strategy and tools into the national plans and strategies.

There were representatives of 4 Associated Partners at the this meeting:

- Ms. Danijela Šutić Zlatić, manager of the Educational Center within Intellectual Property Office of the Republic of Serbia
- Ms. Renata Knežić-Rak, Adria Libar Ltd. (Republic of Croatia)
- Mr. Miloš Milošević, Innovation center of the Faculty of Mechanical Engineering in Belgrade (Republic of Serbia)
- Mr. Karlo Kraškovic, Maritime Technology Cluster FWG (Italy)

The project partners involved in SHIPmEnTT project were faced with similar obstacles in attracting interest from SMEs to participate in pilot activities. In the meantime, interaction with real sector and organizations in charge to provide various supporting services for SMEs, was useful in many aspects and helped partners to

increase awareness on current state in their communities and necessity to continuously upgrade networking and cooperation. The following needs were identified by the consortium:

- improving coordination with national institutions in charge for creation of business enabling environment
- providing adequate human and institutional infrastructure able to respond on needs of private sector
- a systemic approach to development of the local innovation ecosystem including training of intermediaries and establishing a network of support organizations (also beyond national borders)
- adopting of adequate legislation and creating a strategic framework for business development
- establishing quality control and monitoring system to measure the effects of support environment
- enhancing skills of intermediary organizations in terms of funding opportunities and assistance to SMEs in applying for domestic and EU funds
- creating of functional networks on national and ADRIAN level

After a long and fruitful discussion with the members of the advisory board. The following recommendations/conclusions were gathered:

Policy Recommendations for the improvement of innovation support ecosystems in ADRIAN region

- It is important to **introduce entrepreneurial and IP related topics** in formal education programmes in order to increase awareness from early age
- SMEs need **specialized assistance in developing their IP strategy** prior to taking any action related to IP issues
- **Tailor made support and services** for SMEs will yield the best results
- **Dissemination of success stories** can boost awareness and motivate SMEs to take more seriously the potential of commercializing their IP.
- **A strong network of ADRIAN** policy makers is required to network and frequently meet to exchange of information, good practices and experiences

More info on SHIPMENTT at: <https://shipmentt.adrianinterreg.eu/>

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NEXT STEPS of THEMATIC CLUSTER

- Stay tuned in order to explore the next monthly newsletters of our Thematic Cluster, with informative articles, updates on programs, contests, activities, conferences and other-related news;
- Next newsletter by Blue Boost and OIS-AIR projects of TC;
- Development of a joint policy paper with scientific recommendations for influencing the policy debate in the topic of Blue Growth and related Smart Growth;
- Development of a report on new areas/fields of intervention/project ideas developed by the TC to be financed in the next programming period.

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