Universitatea Națională
de Știință și Tehnologie
POLITEHNICA BUCUREȘTI

Utilizarea tehnologiilor digitale pentru eficientizarea proceselor din sistemele de oxigenare a apelor

Domeniul științific de încadrare: Științe inginerești

- Al treilea raport intermediar–
(perioada 5 decembrie 2024– 31 iulie 2025)

Director proiect: Sl. dr. ing. Ionela Mihaela CONSTANTIN

Proiect de cercetare din cadrul Competiției AOSR -TEAMS – III, Ediția 2024-2025

Universitatea Națională
de Știință și Tehnologie
POLITEHNICA BUCUREȘTI

Obiectivul general al proiectului. ***Analiza unei tehnologii inovatoare de oxigenare a apelor staționare și a producției energiei electrice, amplasată pe platformă controlată de la distanță cu ajutorul tehnologiilor digitale, utilizând energie solară.***

Echipa de cercetare:

Sl. Dr. Ing. IBREAN Elena Beatrice
Drd. Ing. URDUZA Dănuț Cristian
Drd. Ing. Chiriac Gabriel-Adrian

Activitatea A3. Pentru a asigura bună oxigenare a întregului acvasistem se dorește ca platforma să fie una mobilă, capabilă să parcurgă întreaga suprafață a corpului de apă și să permită modificarea adâncimii la care se face generarea microbulelor de aer în funcție de distanța dintre suprafața apei și fundul lacului.

		2024-2025																			
Activități /Sub-activități		L1	[illegible]	[illegible]	[illegible]	L5	L6	L7	L8	L9	L10	L11	L12	L13	L14	L15	L16	L17	L18	L19	L20
Activitatea A1.	***Studiul sistemului de colectoare solare (L1 - L12)***																				
Subactivitatea A1.1.	Analiza orientării sistemului cu c[illegible]ar în funcție de zona de amplasar[illegible])																				
Subactivitatea A1.2.	Studiul necesarului d[illegible]ie electrică pentru operarea platfor[illegible]nobile cu generatoare de microbule [illegible]e (L7-L12).																				
Activitatea A2.	***Cer[illegible]area soluțiilor constructive ale platformei mobile (L13-L18).***																				
Activitatea A3.	***Implementarea arhitecturii software a ansamblului propus (L13-L20).***																				
Activitatea A4.	***Diseminarea rezultatelor cercetării (L1-L20).***																				

Universitatea Națională de Știință și Tehnologie POLITEHNICA BUCUREȘTI

Un exemplu simplu de cod Python pentru controlul mișcării platformei și colectarea datelor de la senzori.

main.py

```python
import time
import random

class Platform:
    def __init__(self):
        self.position = (0, 0)
        self.oxygen_level = 0.0
        self.temperature = 0.0
        self.ph = 7.0
        self.salinity = 0.0

    def move(self, direction, distance):
        x, y = self.position
        if direction == 'N':
            y += distance
        elif direction == 'S':
            y -= distance
        elif direction == 'E':
            x += distance
        elif direction == 'W':
            x -= distance
        self.position = (x, y)
        print(f'Moved to position: {self.position}')

```

Output

```
Moved to position: (0, 10)
Oxygen Level: 10.12878544786918 mg/L
Temperature: 18.96982353475897 °C
pH Level: 8.818188043555319
Salinity: 0.4534024252841604 PSU
Moved to position: (0, 20)
Oxygen Level: 6.487655614547114 mg/L
Temperature: 17.62234059151486 °C
pH Level: 7.794723787879542
Salinity: 1.3167459552698073 PSU
Moved to position: (0, 30)
Oxygen Level: 6.931121316714114 mg/L
Temperature: 17.793272266852004 °C
pH Level: 7.46400913229337
Salinity: 0.3302600490167992 PSU
Moved to position: (0, 40)
Oxygen Level: 8.67359828463826 mg/L
Temperature: 19.318259295934308 °C
pH Level: 7.892783834164946
Salinity: 1.0065171169163194 PSU
Moved to position: (0, 50)
Oxygen Level: 8.732725954212185 mg/L
Temperature: 23.457827649476464 °C
pH Level: 6.088241698549227
```

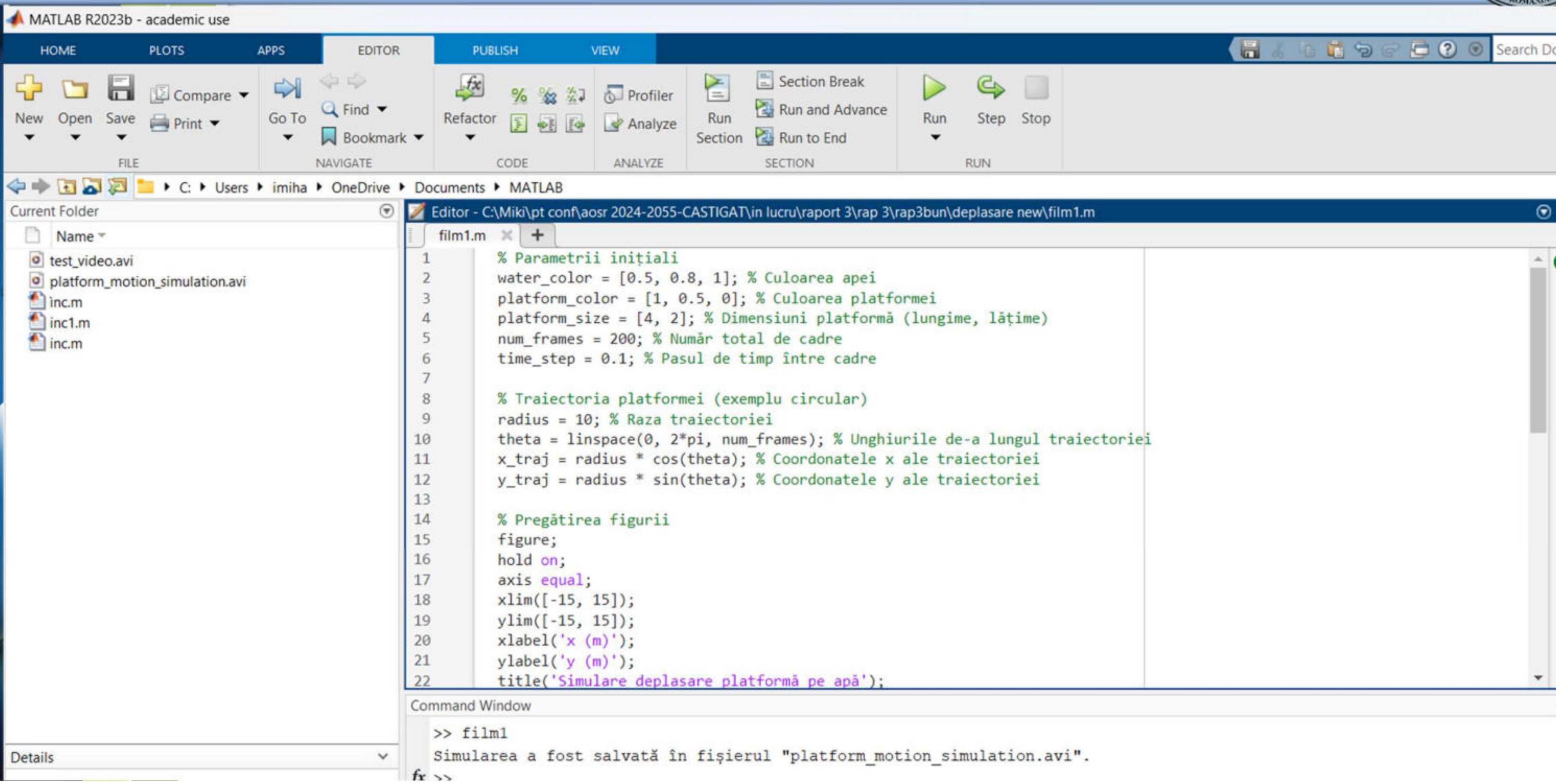
main.py

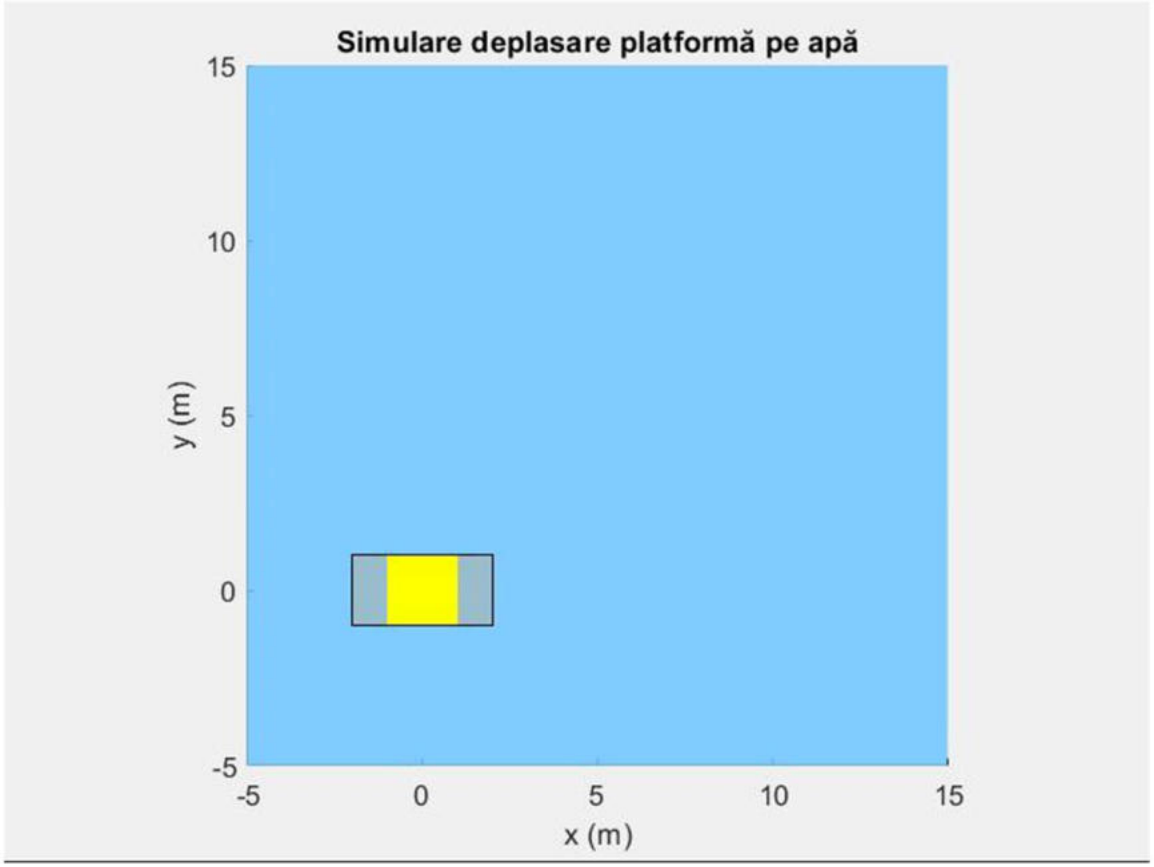
```python
    def read_sensors(self):
        # Simulate reading sensor data
        self.oxygen_level = random.uniform(5, 12)  # mg/L
        self.temperature = random.uniform(15, 25)  # °C
        self.ph = random.uniform(6, 9)
        self.salinity = random.uniform(0.1, 1.5)  # PSU

    def report_status(self):
        print(f'Oxygen Level: {self.oxygen_level} mg/L')
        print(f'Temperature: {self.temperature} °C')
        print(f'pH Level: {self.ph}')
        print(f'Salinity: {self.salinity} PSU')

    def operate(self):
        while True:
            self.move('N', 10)
            self.read_sensors()
            self.report_status()
            time.sleep(5)  # Delay for next operation cycle

if __name__ == "__main__":
    platform = Platform()
    platform.operate()
```

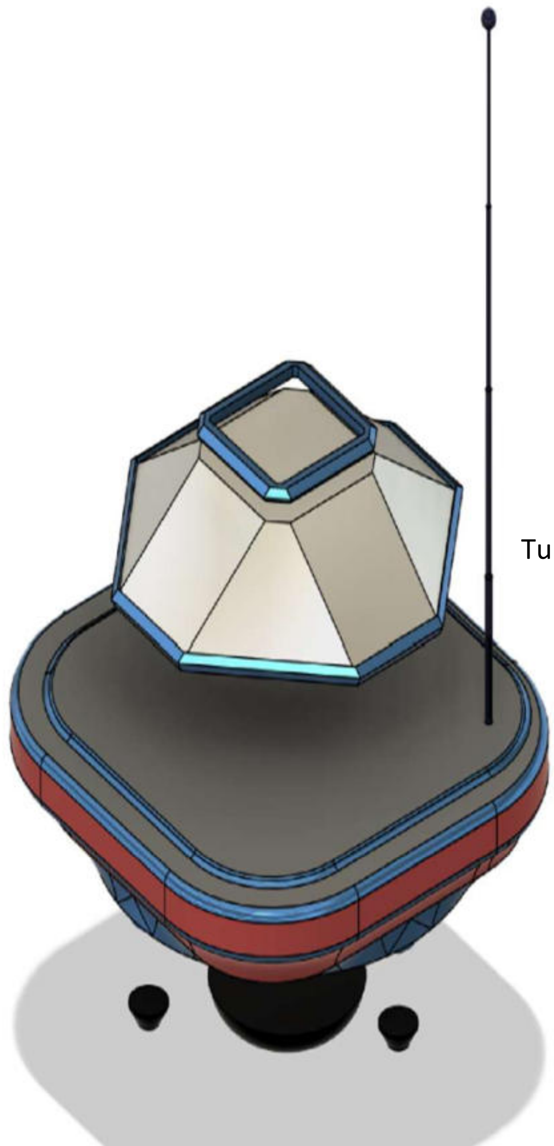
Output

```
Moved to position: (0, 60)
Oxygen Level: 8.576242016816186 mg/L
Temperature: 17.73956890212573 °C
pH Level: 8.984389230265194
Salinity: 0.10087677409825234 PSU
Moved to position: (0, 70)
Oxygen Level: 6.368516568016885 mg/L
Temperature: 18.214503645165536 °C
pH Level: 8.498956301847276
Salinity: 0.24888489467852462 PSU
Moved to position: (0, 80)
Oxygen Level: 5.632343964986061 mg/L
Temperature: 18.5473782802947 °C
pH Level: 8.020242784339501
Salinity: 1.1493151763528386 PSU
Moved to position: (0, 90)
Oxygen Level: 6.384439676793026 mg/L
Temperature: 20.928170750219767 °C
pH Level: 8.1150653327209
Salinity: 0.5239886164680791 PSU
Moved to position: (0, 100)
Oxygen Level: 5.6450689521191375 mg/L
Temperature: 18.40408691305623 °C
pH Level: 6.673580079220615
```

Universitatea Națională
de Știință și Tehnologie
POLITEHNICA BUCUREȘTI




Simulare deplasare platformă pe apă
15
10
5
0
-5
y (m)
-5
0
5
10
15
x (m)

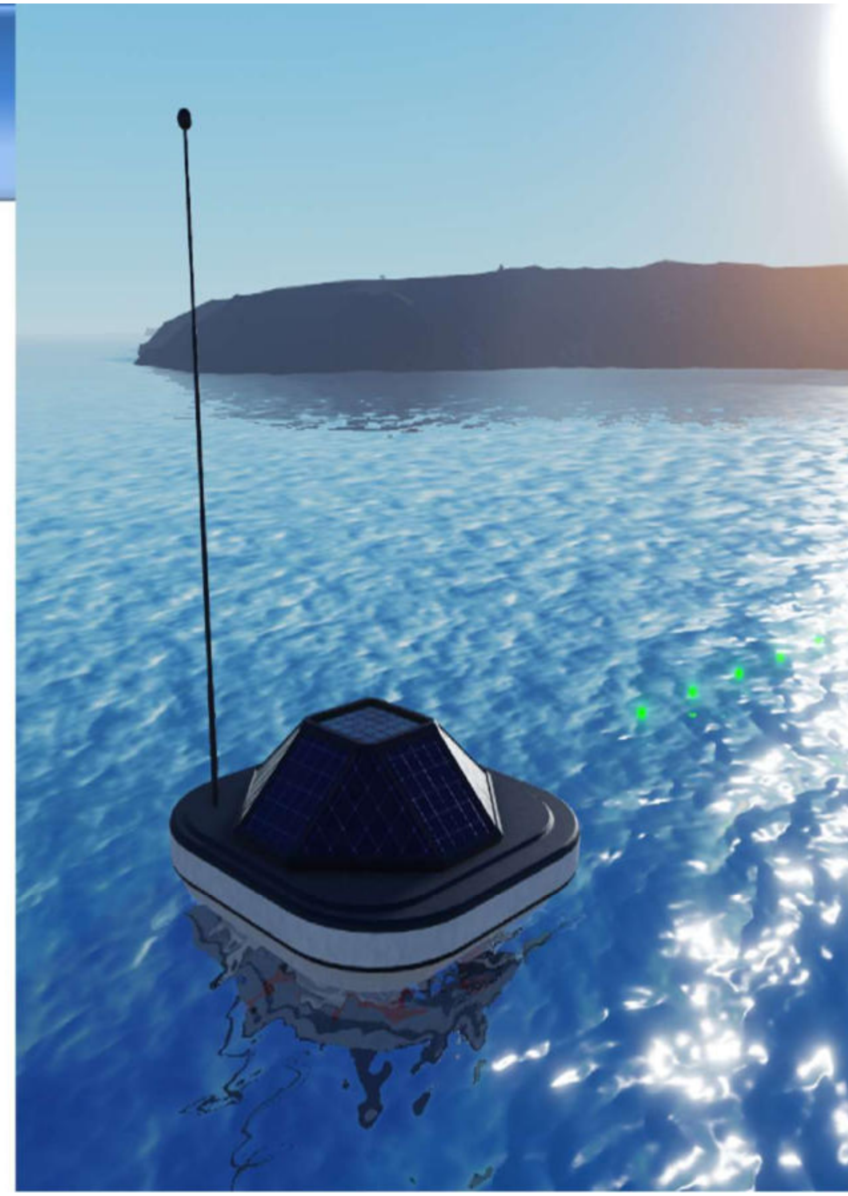


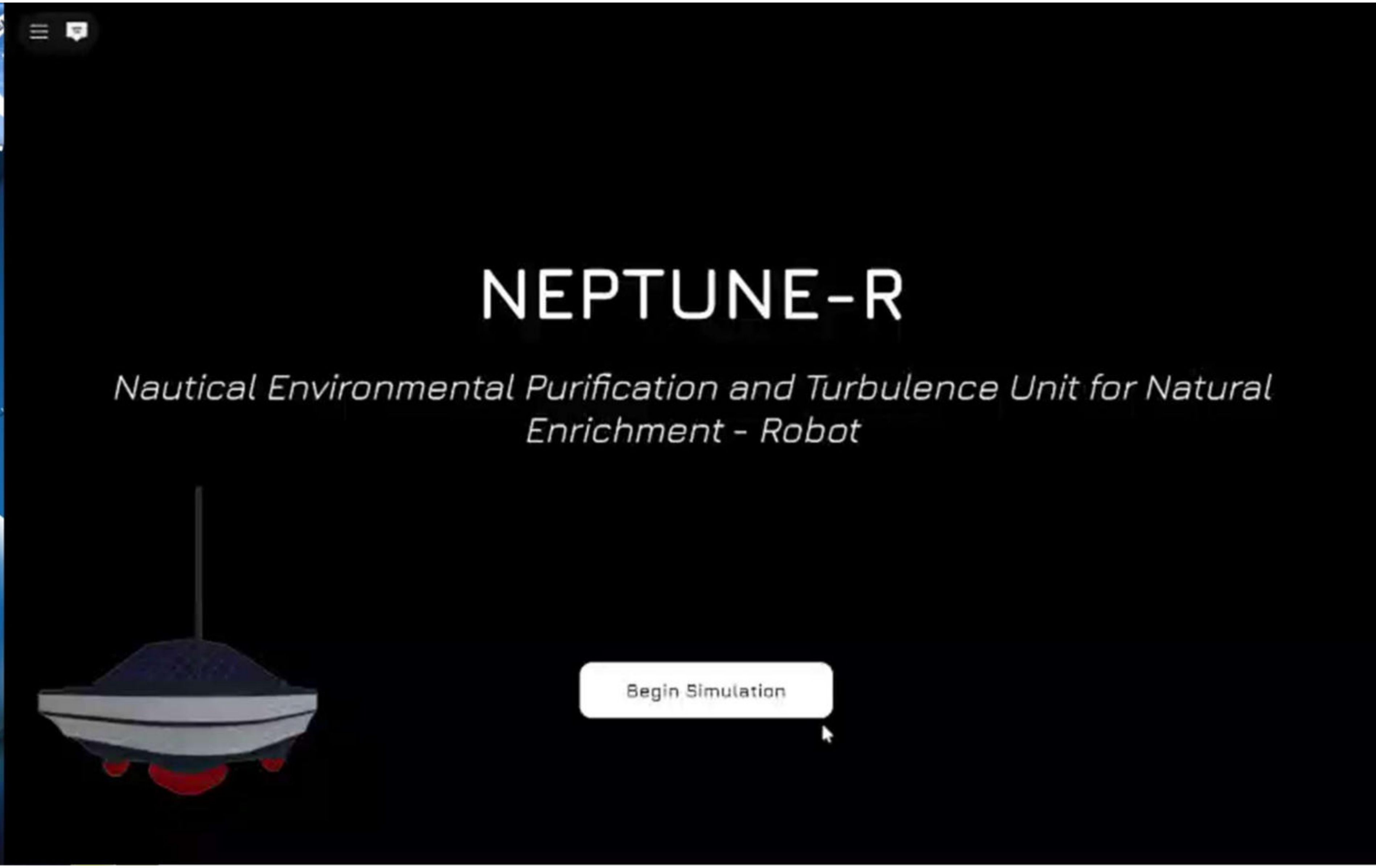
NEPTUNE-R
R

(Nautical Environmental Purification and Turbulence Unit for Natural Enrichment – Robot)

Solar-Powered Autonomous Oxygenator

HydroRover




NEPTUNE-R
Nautical Environmental Purification and Turbulence Unit for Natural Enrichment - Robot
Begin Simulation

Universitatea Națională de Știință și Tehnologie POLITEHNICA BUCUREȘTI

Activitatea A4. Diseminarea rezultatelor cercetării

Mathematical Modeling of Oxygen Transfer Using a Bubble Generator at a High Reynolds Number: A Partial Differential Equation Approach for Air-to-Water Transfer

By Are you this author?	Constantin, M (Constantin, Mihaela) [1], [2]; Dobre, C (Dobre, Catalina) [1], [2]; Oprea, M (Oprea, Mugurel) [1] View Web of Science ResearcherID and ORCID (provided by Clarivate)
Source	INVENTIONS Volume: 9 Issue: 4 DOI: 10.3390/inventions9040076
Article Number	76
Published	AUG 2024
Indexed	2024-09-15
Document Type	Article
Jump to	Enriched Cited References
Abstract	This paper presents the mathematical modeling of the oxygen transfer process using partial differential equations (PDEs). This process is crucial in various environmental and engineering applications, such as wastewater treatment, aeration systems, and natural water bodies, in order to maintain water quality. The authors solved the typical PDE for describing the change in oxygen concentration over time and present the developed model of the differential equation with the term "source", indicating that the model could be used to optimize oxygen transfer in various environmental and engineering applications, contributing to improved water quality and system efficiency.
Keywords	Author Keywords: differential equation; partial derivatives; oxygen transfer; water oxygenation; bubble generators
Author Information	Corresponding Address: Constantin, Mihaela; Dobre, Catalina (corresponding author) Natl Univ Sci & Technol POLITEHN Bucharest, Fac Mech Engn & Mechatron, Dept Thermotech Engines Thermal & Refrigerat Equip, Bucharest 060042, Romania Corresponding Address: Constantin, Mihaela; Dobre, Catalina (corresponding author) Acad Romanian Scientists, Ilfov 3, Bucharest 050044, Romania

Journal Impact Factor:2.1
Category Quartile: Q2

https://www.webofscience.com/wos/woscc/full-record/WOS:001305566000001

inventions MDPI

Article

Mathematical Modeling of Oxygen Transfer Using a Bubble Generator at a High Reynolds Number: A Partial Differential Equation Approach for Air-to-Water Transfer

Mihaela Constantin [1,2,*], Cătălina Dobre [1,2,*] and Mugurel Oprea [1]

1 Department of Thermotechnics, Engines, Thermal and Refrigeration Equipment, Faculty of Mechanical Engineering and Mechatronics, National University of Science and Technology "POLITEHNICA" of Bucharest, 060042 Bucharest, Romania; dragosmugurel.oprea@yahoo.com
2 Academy of Romanian Scientists, Ilfov 3, 050044 Bucharest, Romania
* Correspondence: i.mihaelaconstantin@gmail.com (M.C.); catalina.dobre@upb.ro (C.D.)

Abstract: This paper presents the mathematical modeling of the oxygen transfer process using partial differential equations (PDEs). This process is crucial in various environmental and engineering applications, such as wastewater treatment, aeration systems, and natural water bodies, in order to maintain water quality. The authors solved the typical PDE for describing the change in oxygen concentration over time and present the developed model of the differential equation with the term "source", indicating that the model could be used to optimize oxygen transfer in various environmental and engineering applications, contributing to improved water quality and system efficiency.

Keywords: differential equation; partial derivatives; oxygen transfer; water oxygenation; bubble generators

https://www.mdpi.com/2411-5134/9/4/76

Universitatea Națională
de Știință și Tehnologie
POLITEHNICA BUCUREȘTI

A Review of Available Solutions for Implementation of Small-Medium Combined Heat and Power (CHP) Systems

By: Dobre, C (Dobre, Catalina) [1], [2]; Costin, M (Costin, Mihnea) [1]; Constantin, M (Constantin, Mihaela) [1], [2]

Are you this author?

View Web of Science ResearcherID and ORCID (provided by Clarivate)

Source: INVENTIONS
Volume: 9 Issue: 4
DOI: 10.3390/inventions9040082

Article Number: 82

Published: AUG 2024

Indexed: 2024-09-15

Document Type: Review

Journal Impact Factor:2.1
Category Quartile: Q2

Abstract: The transition towards a sustainable and renewable energy future is essential to mitigate climate change and reduce greenhouse gas emissions. Small-medium combined heat and power (CHP) systems are increasingly popular for distributed energy generation, as they offer improved energy efficiency and reduced emissions compared to traditional power generation systems. This article reviews recent research articles related to small-medium CHP systems, including their role in renewable energy systems, use of biofuels, steam injection, diagnostics, and carbon capture. Throughout the research, the high potential of coastal regions has been observed and studied as a solid base for the later development of CHP systems. Based on the reviewed literature, the highest potential solutions are proposed to be further investigated as an efficient, economical solution for generating electricity and heat for various small-scale applications.

Keywords: Author Keywords: CHP; energy efficiency; power generation systems; renewable energy systems

Author Information:
Corresponding Address: Dobre, Catalina; Constantin, Mihaela (corresponding author)
Natl Univ Sci & Technol Politehn Bucharest, Dept Engn Thermodynam Engines Thermal & Refrigerat, Splaiul Independentei 313, Bucharest 060042, Romania
Corresponding Address: Dobre, Catalina; Constantin, Mihaela (corresponding author)
Acad Romanian Scientists, Ilfov 3, Bucharest 050044, Romania

https://www.webofscience.com/wos/woscc/full-record/WOS:001305546400001

inventions MDPI

Review

A Review of Available Solutions for Implementation of Small–Medium Combined Heat and Power (CHP) Systems

Cătălina Dobre [1,2,*], Mihnea Costin [1] and Mihaela Constantin [1,2,*]

[1] Department of Engineering Thermodynamics, Engines, Thermal and Refrigeration Equipment, National University of Science and Technology Politehnica Bucharest, Splaiul Independenței 313, 060042 Bucharest, Romania; mihnea.costin3737@gmail.com
[2] Academy of Romanian Scientists, Ilfov 3, 050044 Bucharest, Romania
* Correspondence: catalina.dobre@upb.ro (C.D.); constantin.mihaela@upb.ro (M.C.); Tel.: +40-214029339 (M.C.)

Abstract: The transition towards a sustainable and renewable energy future is essential to mitigate climate change and reduce greenhouse gas emissions. Small–medium combined heat and power (CHP) systems are increasingly popular for distributed energy generation, as they offer improved energy efficiency and reduced emissions compared to traditional power generation systems. This article reviews recent research articles related to small–medium CHP systems, including their role in renewable energy systems, use of biofuels, steam injection, diagnostics, and carbon capture. Throughout the research, the high potential of coastal regions has been observed and studied as a solid base for the later development of CHP systems. Based on the reviewed literature, the highest potential solutions are proposed to be further investigated as an efficient, economical solution for generating electricity and heat for various small-scale applications.

Keywords: CHP; energy efficiency; power generation systems; renewable energy systems

https://www.mdpi.com/2411-5134/9/4/82

Universitatea Națională
de Știință și Tehnologie
POLITEHNICA BUCUREȘTI

PAPER • OPEN ACCESS

Presentation of some constructive solutions for a rotating machine with profiled rotors

Gabriel Fischer-Szava, Alexandru Dobrovicescu, Georgiana Dăescu (Duiculete), Nicolae Băran, Mihaela Constantin, Cătălina Dobre, Rana Adil Abdul-Nabe and Sevastiana Areta Ghioca

Published under licence by IOP Publishing Ltd

IOP Conference Series: Materials Science and Engineering, Volume 1290, XXIIIrd National Conference on Thermodynamics with International Participation 11/05/2023 - 13/05/2023 Galati, Romania

Citation Gabriel Fischer-Szava *et al* 2023 *IOP Conf. Ser.: Mater. Sci. Eng.* **1290** 012006

DOI 10.1088/1757-899X/1290/1/012006

Article PDF

Authors ▲ References ▼

Mihaela Constantin

AFFILIATIONS

University Politehnica of Bucharest, Faculty of Mechanical Engineering and Mechatronics, Bucharest, Romania

Academy of Romanian Scientists, Ilfov 3, 050044, Bucharest, Romania

https://iopscience.iop.org/article/10.1088/1757-899X/1290/1/012006

XXIIIrd National Conference on Thermodynamics with International Participation IOP Publishing
IOP Conf. Series: Materials Science and Engineering 1290 (2023) 012006 doi:10.1088/1757-899X/1290/1/012006

Presentation of some constructive solutions for a rotating machine with profiled rotors

Gabriel Fischer-Szava[1], Alexandru Dobrovicescu[1], Georgiana Dăescu (Duiculete)[1], Nicolae Băran[1], Mihaela Constantin[1,2], Cătălina Dobre[1,2], Rana Adil Abdul-Nabe[1], Sevastiana Areta Ghioca[1]

[1]University Politehnica of Bucharest, Faculty of Mechanical Engineering and Mechatronics, Bucharest, Romania

[2]Academy of Romanian Scientists, Ilfov 3, 050044, Bucharest, Romania

i.mihaelaconstantin@gmail.com

Abstract. The purpose of the paper is to present an original solution for conveying some liquids with the help of a rotating volumetric pump. The pump can be equipped with 1 to 4 specially processed profiled rotors and can transport viscous fluids, pure fluids, or polyphase fluids. It was concluded that the performance of this machine, which can also be used as a fan or low-pressure compressor, is superior to other similar machines.

https://iopscience.iop.org/article/10.1088/1757-899X/1290/1/012006/pdf

TECHNIUM

Technium Vol. 14, pp.1-4 (2023)
ISSN: 2668-778X
www.techniumscience.com

The design of a new oxygenation system for water flowing through a tube

Mugurel Oprea[1], Nicolae Băran[1], Mihaela Constantin[1,2]*

[1]Depart. of Thermotechnics, Engines, Thermal and Refrigeration Equipment
University Politehnica of Bucharest
Bucharest, Romania
i.mihaelaconstantin@gmail.com

Ana-Maria Nicolau[1], Cătălina Dobre[1,2], Beatrice Ibrean[1]

Depart. of Thermotechnics, Engines, Thermal and Refrigeration Equipment
[2]Academy of Romanian Scientists, Ilfov 3, 050044, Bucharest, Romania
i.mihaelaconstantin@gmail.com

***Abstract*—Due to climate change, stagnant or flowing waters continue to warm, and the content of dissolved oxygen in water decreases, endangering aquatic ecosystems and anthropogenic activities. To improve the water quality, water oxygenation or water aeration are used. This paper presents a system that aims to increase the concentration of the O_2 dissolved in water flowing through tubes. The assembly of a helix with orifices through which air is introduced with pressure given by a compressor inside a tube is presented.**

Keywords*— *flowing waters, water oxygenation, dissolved oxygen in water

very quickly, produce gases, have a swampy appearance and in this case, water aeration is a mandatory process.

The use of microbubble generators brings an additional advantage, namely, it produces water bubbling which leads to a magnification in the degree of water turbulence that does not allow the algae development. Aquaculture brought serious negative effects on the aquatic environment due to the need to store large quantities of fish, such as depletion of oxygen content and eutrophication [8-10]. Low oxygen in water can kill fishes and other organisms present in water [11]. Recently, in areas with limited resources, research has

https://doi.org/10.47577/technium.v14i.9663

Universitatea Națională de Știință și Tehnologie POLITEHNICA BUCUREȘTI

TECHNIUM

Technium Vol. 14, pp.10-13 (2023)
ISSN: 2668-778X
www.techniumscience.com

Analysis of a rotary pump with two sectional impellers

Fischer- Szava Gabriel[1], Băran Nicolae[1], Constantin Mihaela[1,2]*, Nicolau Ana-Maria[1],

[1]Depart. of Thermotechnics, Engines, Thermal and Refrigeration Equipment
University Politehnica of Bucharest
Bucharest, Romania
i.mihaelaconstantin@gmail.com

Adil Abdul-Nabe Rana[1], Ghioca Sevastiana Areta[1], Dăescu (Duiculete) Georgiana[1]

Depart. of Thermotechnics, Engines, Thermal and Refrigeration Equipment
[2]Academy of Romanian Scientists, Ilfov 3, 050044, Bucharest, Romania
i.mihaelaconstantin@gmail.com

***Abstract*—The presented study shows aspects related to the fluid flow inside a rotary machine; this type of machine can be utilized as a ventilator, air pump or blower. Relations for computing the driving power of this pump as well as the fluid flow rate of transported are presented. The sealing between the impellers and between the impellers and the machine casing is studied and the advantages of different types of impeller shapes are specified.**

***Keywords*—rotary working machine, sectional impellers, volumetric pump**

Fang [22] patented a new impeller profile by introducing four circular springs to increase the efficiency of a vacuum pump. By using a single circular spring, the authors of [23] presented a two-lobed impeller with a new geometric design for the airfoil of it. By combining the conjugate epicyclical curve and circular arcs, a new impeller profile was developed [24].

What one can deduct from the analysis of the specialized literature above, is that the efficiency of the pump and the level of sealing are the key points in the design of a pump, which means that the subjects related to the geometric shape

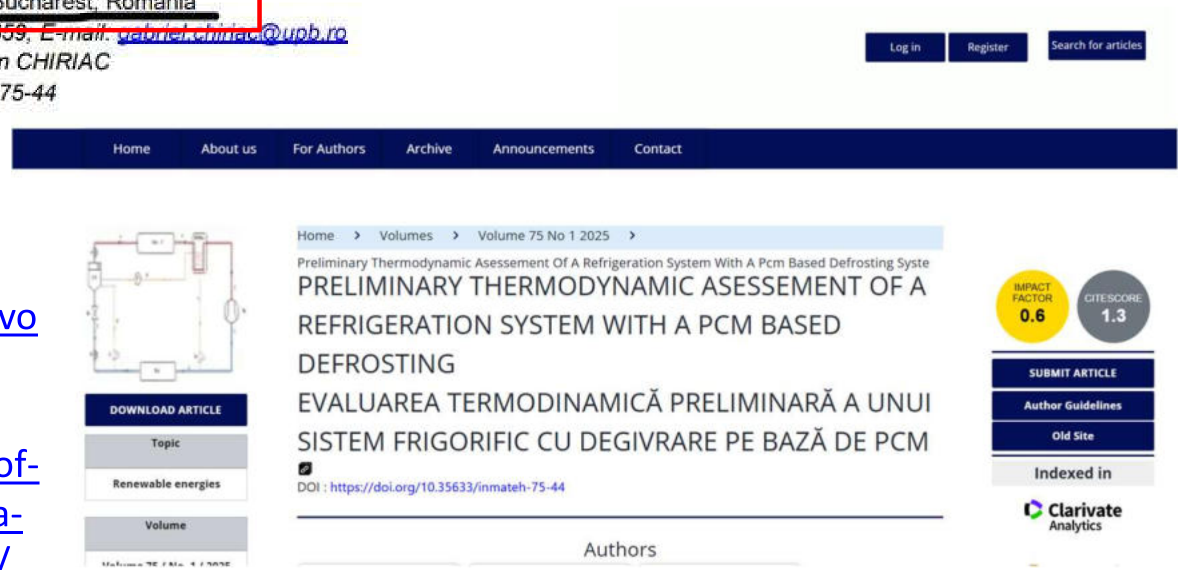
https://doi.org/10.47577/technium.v14i.9665

Vol. 75, No. 1 / 2025 INMATEH - Agricultural Engineering

PRELIMINARY THERMODYNAMIC ASESSEMENT OF A REFRIGERATION SYSTEM WITH A PCM BASED DEFROSTING / *EVALUAREA TERMODINAMICĂ PRELIMINARĂ A UNUI SISTEM FRIGORIFIC CU DEGIVRARE PE BAZĂ DE PCM*

Valentin APOSTOL[1], Horatiu POP *[1], Tudor PRISECARU[1], Claudia IONITA[1], Jamal AL DOURI[1]
Adrian CHIRIAC*[1,2], Cornel Constantin PAVEL[1]
[1] Faculty of Mechanical Engineering and Mechatronics, National University of Science and Technology POLITEHNICA Bucharest / Romania.
[2] Academy of Romanian Scientists, Ilfov 3, 050044 Bucharest, Romania
Tel: +40744903488, E-mail: horatiu.pop@upb.ro; Tel: +40721882659, E-mail: gabriel.chiriac@upb.ro
Corresponding authors: Horaţiu POP; Adrian CHIRIAC
DOI: https://doi.org/10.35633/inmateh-75-44

https://inmateh.eu/volumes/volume-75--no-1--2025/preliminary-thermodynamic-asessement-of-a-refrigeration-system-with-a-pcm-based-defrosting-syste/



Universitatea Națională de Știință și Tehnologie POLITEHNICA BUCUREȘTI

Sixteen International Conference on Thermal Engineering: Theory and Applications
June 18-20, 2025 Bucharest, Romania

https://www.ictea.ca/

Investigation of Cyclone Separator Configurations for Efficient Two-Phase Medium Separation

M. Constantin[1,2], A. Chelmuș[1], N. Băran[1], D. Taban[1], B. Ibrean[1], D. Dima[1], C. Dobre[1*], M. Oprea[1]

[1]National University of Science and Technology „POLITEHNICA" of Bucharest, Romania, Depart. of Thermotechnics, Engines, Thermal and Refrigeration Equipment, Bucharest, Romania
[2]Academy of Romanian Scientists, Ilfov 3, 050044, Bucharest, Romania

---

Abstract

This paper presents the analysis of a dry separation system used for two-phase medium separation, consisting of a gas phase (air) and solid particles (polyethylene particles, Φ 5). The system features a centrifugal fan that transports the air, which then passes through a cyclone for particle separation. The air, now free of particles, is recirculated into the atmosphere, while the separated particles are collected for disposal. The pressure drop, measured by a differential manometer, is used to determine the airflow rate through the system. The scope of the research includes Matlab simulations to assess flow behavior, vortex stability, separation efficiency and the particle's trajectory within the cyclone chamber. Additionally, the research investigates the impact of connecting cyclones in series and parallel arrangements, highlighting differences in performance, air throughput, and particle removal efficiency.The findings emphasize the importance of selecting the optimal cyclone configuration and fan arrangement for achieving efficient separation and minimal energy consumption in industrial dust removal applications. The results are applicable in various fields, including air purification and chemical processing industries.

Universitatea Națională
de Știință și Tehnologie
POLITEHNICA BUCUREȘTI

https://www.ictea.ca/

Energetic and exergetic analysis of the cryogenic air liquefaction plant based on the simple Linde-Hampson cycle

D. C. Urduza[1,3], L. Grosu[2], G. L. Gaiu[1*], A. Serban[1], A. Dobrovicescu[1]

[1]National University of Science and Technology POLITEHNICA BUCURESTI, Bucharest, Romania
[2] Universite Paris Nanterre, Laboratoire Energétique Mécanique Electromagnétisme (LEME), IUT de Ville d'Avray, France
[3]Academy of Romania Scientists, Ilfov 3, 050044 Bucharest, Romania

*Correspondence: george.gaiu@criomecsa.ro (G.L.G.)

Abstract
The study analyzes the operation of the Linde-Hampson type cryogenic air liquefaction plant with one throttling. To identify the causes of system inefficiency, the exergetic analysis method is used, which succeeds in locating and quantifying the destructive effects of functional processes. The results of the exergy analysis show that the highest exergy consumptions are associated with the throttling process (41.15% of the mechanical power consumption) and the heat transfer at a finite temperature difference in the recuperative heat exchanger (14%). The directions to be followed in the strategy to improve the performance of the installation are thus identified either through functional changes of the specified scheme or through structural changes. Graphs are presented that show the sensitivity of the performance characteristics of the system (y [kg liquid/kg compressed air], w [MJ/kg liquid air] and COP) to the change of the decision parameters, and changes are proposed in the structure of the plant scheme in order to optimize its operation.

Keywords: Functional optimization, Structural optimization, Exergy Destruction

In both, his 2021 study [1] and 2023 study [5], Yanbin

MDPI

Journals | Topics | Information | Editing Services | Initiatives | About | Sign In / Sign Up | Submit

Search for Articles: Title / Keyword | Author / Affiliation / Email | Thermo | All Article Types | Search | Advanced

Journals / Thermo

Tracked for Impact Factor | CITESCORE 2.1

thermo

Submit to *Thermo*

Review for *Thermo*

Share

Journal Menu

- *Thermo* Home
- Aims & Scope
- Editorial Board
- Instructions for Authors

Thermo

Thermo is an international, **peer-reviewed**, open access journal on all aspects of thermal sciences, including key features on thermodynamics, statistical mechanics, kinetic theory and satellite areas, published quarterly online by MDPI.

- **Open Access** — free for readers, with **article processing charges (APC)** paid by authors or their institutions.
- **High Visibility:** indexed within **ESCI (Web of Science)**, **Scopus**, **EBSCO**, and **other databases**.
- **Rapid Publication:** manuscripts are peer-reviewed and a first decision is provided to authors approximately 21.6 days after submission; acceptance to publication is undertaken in 3.1 days (median values for papers published in this journal in the first half of 2024).
- **Recognition of Reviewers:** APC discount vouchers, optional signed peer review, and reviewer names published annually in the journal.
- ***Thermo* is a companion journal of *Entropy*.**

E-Mail Alert

Add your e-mail address to receive forthcoming issues of this journal:

Enter Your E-Mail Address...

Subscribe

News

5 November 2024

MDPI INSIGHTS: The CEO's Letter #17 - OA Week, Basel Open Day, Beijing Graphene Forum

Manuscript Status

Incomplete submissions (0) | **Under processing (2)** | Website Online (3) | Rejected / Withdrawn / Archived (1)

Manuscript ID	Journal	Section / Special Issue	Title	Status	Submission Date
thermo-3369528 **B**	Thermo	SI: Editorial Board Members’ Collection Series: Molecular Simulation and Thermodynamics	Thermodynamic analysis methods applied to the study of stationary water oxygenation processes: Mathematical modeling and simulation	Under review	2024-11-28 11:53:33

Universitatea Națională
de Știință și Tehnologie
POLITEHNICA BUCUREȘTI

thermo

MDPI

Article

Thermodynamic analysis methods applied to the study of stationary water oxygenation processes: Mathematical modeling and simulation

Mihaela Constantin [1,2*], Cătălina Dobre [1,2,*], Mugurel Oprea [1,*]

[1] Department of Thermotechnics, Engines, Thermal and Refrigeration Equipment; Faculty of Mechanical Engineering and Mechatronics; National University of Science and Technology "POLITEHNICA" of Bucharest, Romania, Bucharest; 060042; Romania; MC: i.mihaelaconstantin@gmail.com; CD: catalina.dobre@upb.ro; MO: dragosmugurel.oprea@yahoo.com.

[2] Academy of Romanian Scientists, Ilfov 3, 050044 Bucharest, Romania

* Correspondence: i.mihaelaconstantin@gmail.com (MC); catalina.dobre@upb.ro (CD); dragosmugurel.oprea@yahoo.com (MO)

Vă mulțumesc pentru atenție!