



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

Domeniul științific de încadrare: Științe inginerești

- Primul raport intermediar –
(perioada 8 aprilie – 31 iulie)

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

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



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

Identificarea și analiza soluțiilor de captare eficientă a energiei solare

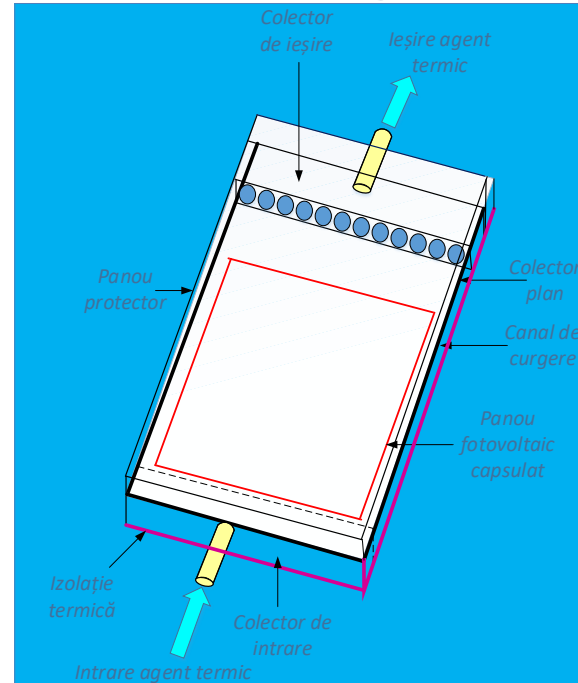


Fig. 1. Panou solar PV/T [5][17]



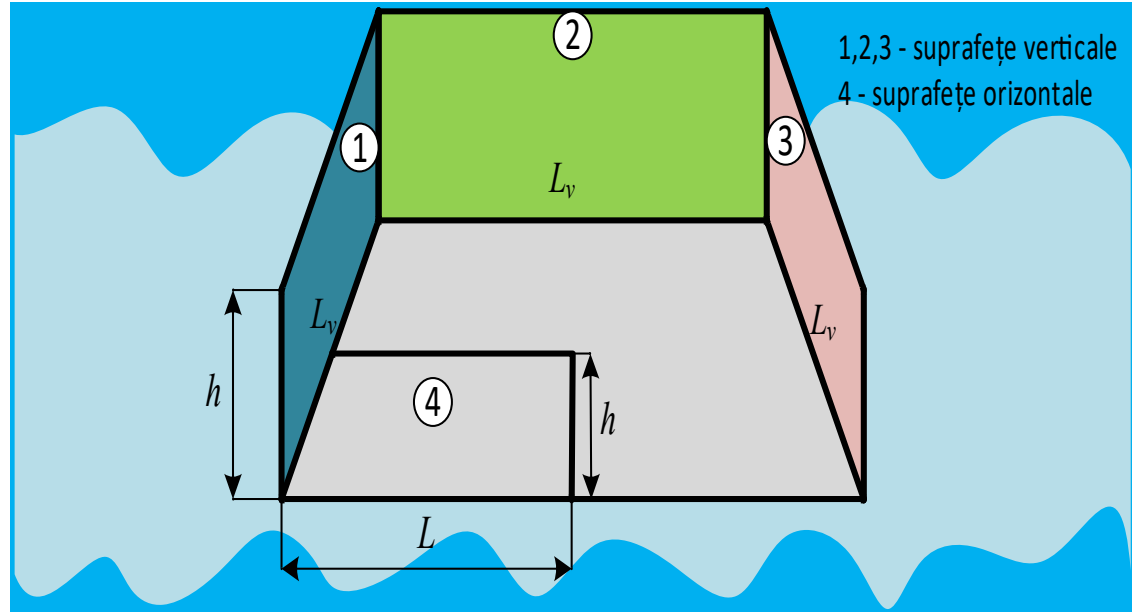


Fig. 2. Modul de amplasare al colectoarelor solare în plan vertical [12][13][14]



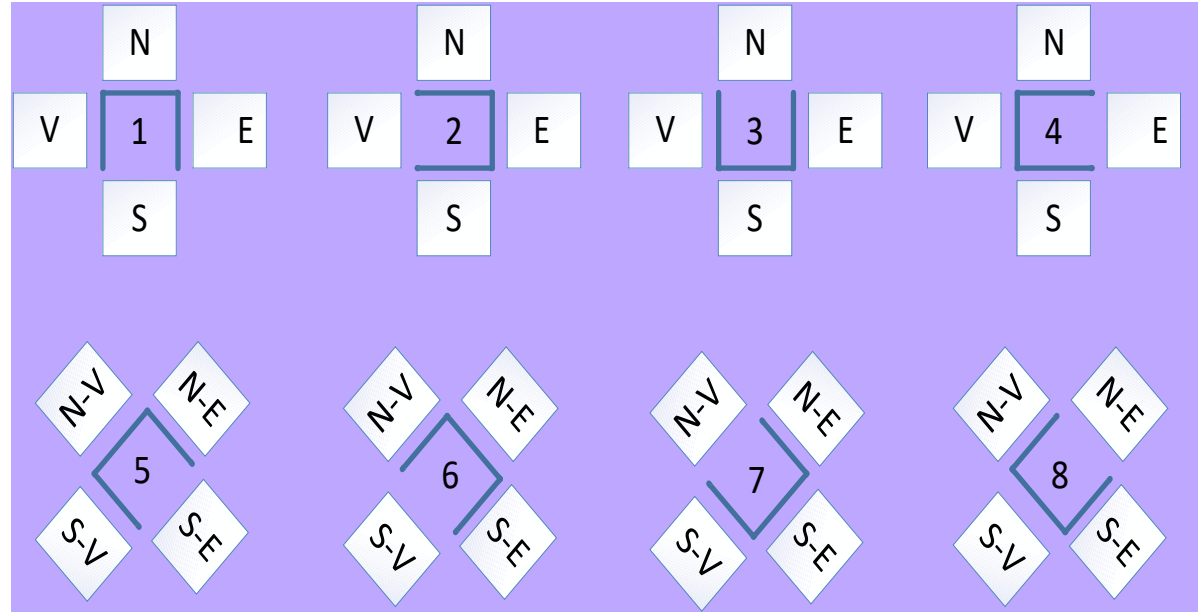


Fig. 3. Poziționarea colectoarelor verticale în funcție de punctele cardinale



Q[Wh/m²]

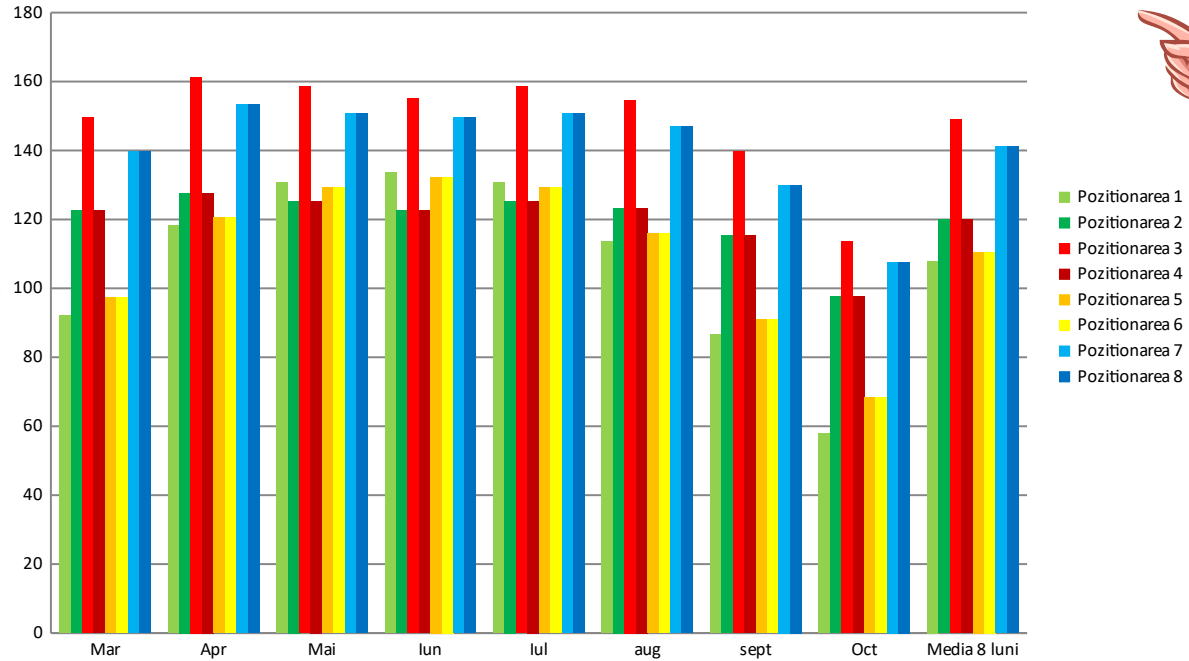


Fig. 4. Fluxul termic total al radiației solare pe cele trei panouri dispuse în plan vertical raportat la 24 de ore în funcție de poziționarea panourilor față de punctele cardinale și luna calendaristică [18]



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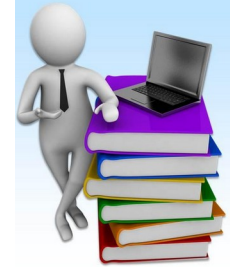
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Type of the Paper (Article)

Differential equation with partial derivatives of the oxygen transfer process from air to water

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Abstract: The 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 maintaining water quality. The authors solved the typical PDE for describing the change in oxygen concentration over time and presents 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.





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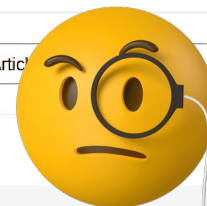
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Review

A review on available solutions for implementation of Small-medium combined heat and power (CHP) systems

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Authors: Mihnea Costin, Cătălina Dobre *, Mihaela Constantin *

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