



**“Gheorghe Asachi” Technical University of Iasi, Romania**



---

## **THE INFLUENCE OF FINE BUBBLE GENERATORS NOZZLES DIAMETER ON THE DISSOLVED O<sub>2</sub> CONCENTRATION**

**Ionela Mihaela Călușaru\*, Nicolae Băran, George-Lucian Ionescu, Octavian Donțu**

*„POLITEHNICA” University of Bucharest, Faculty of Mechanical and Mechatronics Engineering, 060042, 313,  
Splaiul Independenței, Bucharest, Romania*

---

### **Abstract**

The paper presents an experimental study regarding the influence of fine bubble generators (F.B.G.) nozzles on the oxygen transfer speed from air to water, in case of the pneumatic aeration processes of stationary (still) waters. This experimental study was conducted after previously, the three models of fine bubbles generators, were computed, designed and constructed to satisfy the conditions imposed in order to provide valid experimental results. The three constructive versions were tested under similar operating conditions so that, the only parameter that influences the transfer of oxygen would be the nozzle diameter. It was found that, with increasing the air outlet diameter the oxygen transfer rate into the water decreases.

*Key words:* fine bubble generators, nozzle diameter, stationary waters oxygenation

*Received: March, 2013; Revised final: June, 2014; Accepted: July, 2014*

---

---

□ Author to whom all correspondence should be addressed: e-mail: [mihaela.calusaru@yahoo.com](mailto:mihaela.calusaru@yahoo.com); Phone: +0764835681; Fax: +0213181019