



# YILDIZ TECHNICAL UNIVERSITY

## FACULTY OF NAVAL ARCHITACTURE AND MARITIME

### DEPARTMENT OF NAVAL ARCHITACTURE AND MARINE ENGINEERING

#### THESIS

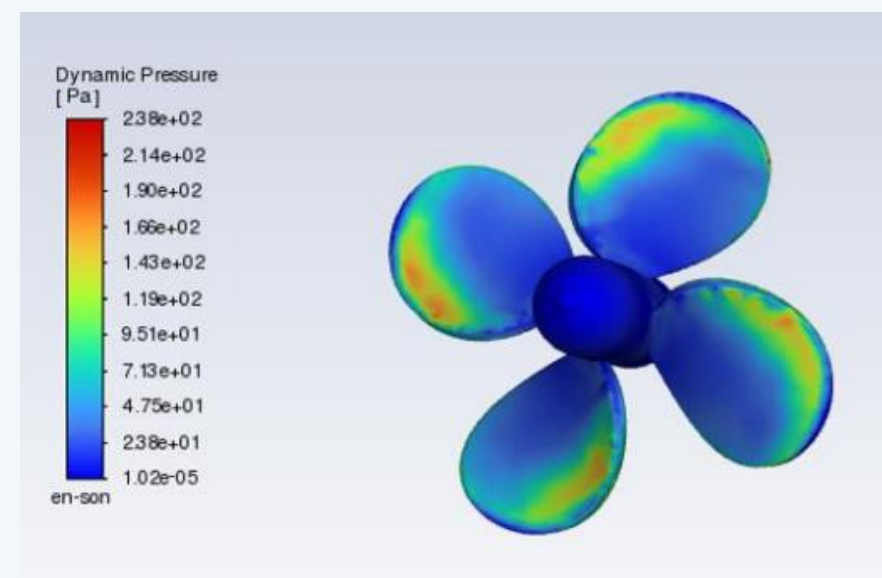
**190A1501 ONUR CAN MAZLUM**

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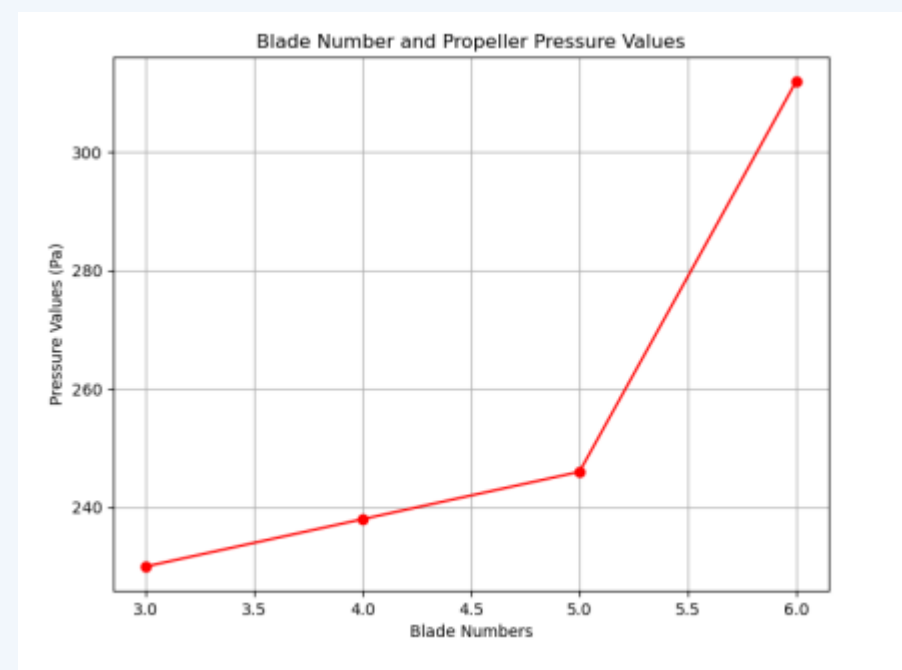
## CFD RESEARCH FOR INSEAN E779A PROPELLER

This study shows the pressure and corrosion values of the INSEAN E779a propeller when the number of blades increases.

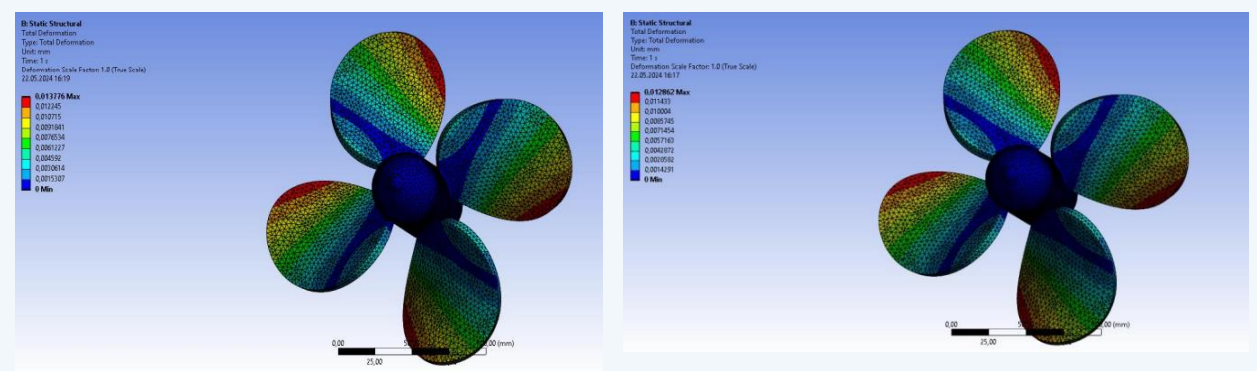
The aim was to observe the Deformation and Stress values occurring by using Copper Alloy and Bronze Alloy materials.



As seen in Figure, when the number of propeller blades increases, the pressure values increase. As pressure values increase, corrosion values per surface decrease.



Deformation and Equivalent stress values that occur when Copper Alloy and Bronze Alloy materials are used are shown.



Deformation and Equivalent (Von - Mises) values that occur when the propeller uses different materials in **4-blade** and **5-blade** cases are shown.

It has been determined that the use of **Copper Alloy** in propeller construction is more accurate.

It has been determined that **Deformation** and **Stress** decrease when the number of wings **increases**.

Deformation – Equivalent (Von-Mises) Results table				
Bronze Alloy			Copper Alloy	
	Deformation	Stress	Deformation	Stress
4 blades	0.013776 mm	23.184 Mpa	0.012862 mm	22.041 MPa
5 blades	0.013299 mm	18.322 Mpa		