



**ANALYSING THE WEAR CHARACTERISTICS  
OF INCONEL 718 ALLOY MANUFACTURED  
BY 3D PRINTING**



**A PROJECT REPORT**

*Submitted by*

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*In partial fulfillment for the award of the degree*

*of*

**BACHELOR OF ENGINEERING**

*in*


**MECHANICAL ENGINEERING**

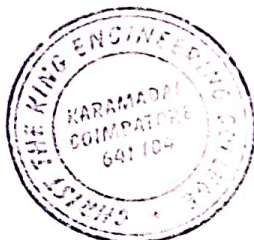
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## BONAFIDE CERTIFICATE

Certified that this project report "ANALYSING THE WEAR CHARACTERISTICS OF INCONEL 718 ALLOY MANUFACTURED BY 3D PRINTING" is the bonafide work of "NANTHAKUMAR K (710419114041), SIVABALASUBRAMANIYAN S (710419114063), VISHNUPRAKASH M (710419114071), who carried out the project work under my supervision.

  
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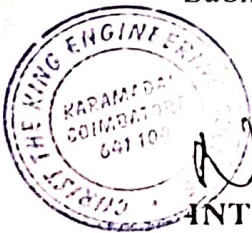
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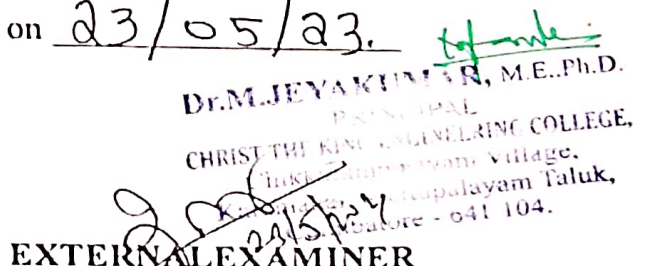
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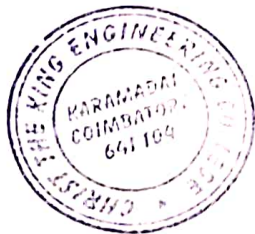


  
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## ABSTRACT

One of the cutting-edge technologies that allows for the preparation of complex geometries is 3D printing. The aerospace industry and other high-stakes fields rely on Inconel superalloy because of its unique combination of qualities, including high strength at high temperatures, corrosion resistance, low thermal conductivity, high hardness, work hardening, and low thermal conductivity. Because of how they are used, aviation parts have to meet stringent reliability and weight requirements, as well as have their mechanical stresses precisely documented. The superalloy Inconel is notoriously challenging to manufacture. As a result, it's more challenging to make intricate geometries. Our experiment uses 3D printing with changing scan speed to create the superalloy Inconel. The wear test was done.




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requirements push the design limits and require innovative solutions. Testing these solutions on a scale of a full machine would be too expensive, but also time consuming. Therefore the universal experimental set-ups are often used to perform tribological research on a prototyping phase, prior to full scale tests.

### Conclusion

DMLS is advanced technology. This can be used for making complex geometry. The super alloy like inconel718 was manufactured and its wear characteristics were analysed by varying scan speed. We have got better result when the scanning speed is lower. The balling formation is dependent on scanning speed. This can be avoided by lowering the scan speed.



  
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