# Article information:

Superhydrophobic TC4 alloy surface fabricated by laser micro-scanning to reduce adhesion and drag resistance - ScienceDirect  
<https://www.sciencedirect.com/science/article/pii/S0257897220303765?via%3Dihub>

# Article summary:

1. Superhydrophobic TC4 alloy surface is fabricated by laser micro-scanning and chemical modification to reduce adhesion and drag resistance.

2. Laser scanning interval and speed have a significant effect on the wetting behavior of the surface.

3. Rheological experiments indicate that the superhydrophobic surface is effective in reducing adhesion and drag resistance.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

The article “Superhydrophobic TC4 Alloy Surface Fabricated by Laser Micro-Scanning to Reduce Adhesion and Drag Resistance” provides an overview of the fabrication process for a superhydrophobic TC4 alloy surface, as well as its potential applications in transportation and biomedicine fields. The article is generally reliable, providing evidence for its claims through experiments such as torque measurements with various shear rates, abrasion tests, soaking tests, water impinge tests, and image processing of water droplet trajectories. The article also discusses potential limitations of the method, such as cost and complexity of fabrication process.

However, there are some points that could be improved upon in terms of trustworthiness and reliability. For example, while the article mentions potential applications in transportation and biomedicine fields, it does not provide any evidence or data to support these claims. Additionally, while the article discusses potential limitations of the method (such as cost), it does not explore any possible risks associated with using this method (such as toxicity). Furthermore, while the article mentions other methods used to reduce surface drag resistance (such as microbubbles method), it does not compare them to this method or discuss their relative merits or drawbacks. Finally, while the article discusses potential applications in transportation and biomedicine fields, it does not explore any counterarguments or alternative solutions that may be available for these problems.

In conclusion, while this article provides a thorough overview of how to fabricate a superhydrophobic TC4 alloy surface to reduce adhesion and drag resistance, there are some areas where more information could be provided in order to make it more trustworthy and reliable.

# Topics for further research:

* Comparison of drag reduction methods
* Toxicity of TC4 alloy surfaces
* Alternative solutions for transportation and biomedicine
* Microbubbles method for drag reduction
* Cost-effectiveness of superhydrophobic surfaces
* Advantages and disadvantages of laser micro-scanning

# Report location:

<https://www.fullpicture.app/item/b73b3d37d2c87d138227ac8295d50333>