

Review Form 3

Journal Name:	Journal of Materials Science Research and Reviews
Manuscript Number:	Ms_JMSRR_131305
Title of the Manuscript:	Investigation of the Influence of Two Different Surfactants on the Frictional Properties of Micro-Arc Oxidation Coatings on Titanium Alloys
Type of the Article	Minireview Article

PART 1: Comments

	<b>Reviewer’s comment</b> Artificial Intelligence (AI) generated or assisted review comments are strictly prohibited during peer review.	<b>Author’s Feedback</b> <i>(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i>
Please write a few sentences regarding the importance of this manuscript for the scientific community. A minimum of 3-4 sentences may be required for this part.	This manuscript addresses crucial gaps in the field of PEO-assisted coatings and provides new insights into using surfactants to improve the quality of coatings. PEO coatings often face issues with porosity and cracking; I believe this approach can help address these problems.	Titanium alloy has excellent comprehensive performance, but the titanium alloy has low hardness and poor wear resistance, and the formation of metallurgically bonded film layer by micro-arc oxidation treatment of titanium alloy can significantly improve the wear resistance of the substrate, but the film layer will also appear microcracks such as microporous microcracks and other problems affecting the structure and performance of the film layer. Therefore, the combination of Cu particles with good self-lubricating properties and the micro-arc oxidized film layer is considered to prepare a composite film layer combining soft and hard on the surface of titanium alloy in order to comprehensively improve its wear-resistant properties. The effect of two surfactants on the film quality of Cu-containing micro-arc oxidized film layer was also investigated.  Translated with DeepL.com (free version)
Is the title of the article suitable? (If not please suggest an alternative title)	Although the title clearly indicates the purpose of the study, it is somewhat lengthy. I suggest a more concise title like “ Impact of Two Surfactants on the Frictional Properties of Micro-Arc Oxidation Coatings on Titanium Alloys”	Impact of Two Surfactants on the Frictional Properties of Micro-Arc Oxidation Coatings on Titanium Alloys
Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here.	The abstract provides a solid overview of the study, but it could benefit from some refinement for clarity and conciseness.  1. The methods section, while thorough, could be streamlined for better clarity. 2. The implications of your findings should be highlighted more explicitly in the conclusion.  Conclusion: The addition of SDBS significantly enhances the friction performance and adhesion of the oxide film through micro-arc oxidation, suggesting potential applications in wear-resistant coatings..	Although the titanium alloy micro-arc oxidized film layer has obvious improvement in hardness and friction properties, it is poorly ductile and brittle. Constrained by the mechanism of micro-arc oxidation, the film layer still has holes. Therefore, the micro-arc oxidation film is used as a transition layer, and copper is plated on the titanium alloy micro-arc oxidation film layer to form a composite film layer of MAO+Cu, in order to increase the bonding strength of the copper-plated layer with the titanium alloy substrate, and to prepare a composite film layer that is a combination of softness and hardness.
Is the manuscript scientifically, correct? Please write here.	Yes, as a researcher who works with PEO coatings and surfactants, I believe it is scientifically correct.	Yes
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.	The references used are recent, but I believe additional references, such as those from papers that utilized surfactants, could be beneficial. 1. In-vitro biocompatibility, antibacterial activity, and corrosion resistance of HA-TiO2/ZnO coating fabricated by plasma electrolytic oxidation on Ti6Al4V	Yes

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	2. Plasma electrolytic oxidation deposited HAp-Ta2O5 composite coatings on Ti6Al4V for biomedical applications: The importance of Ta2O5 reinforcing phase	
Is the language/English quality of the article suitable for scholarly communications?	I think the quality is suitable; however, using shorter and more direct sentences is better than using some long ones.	
Optional/General comments		

PART 2:

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
Are there ethical issues in this manuscript?	<i>(If yes, Kindly please write down the ethical issues here in details)</i>	