

利用課題番号 : F-16-NU-0129
利用形態 : 機器利用
利用課題名(日本語) : 皮膚傷害の発症過程における皮膚接触力学の特性
Program Title(English) : Characteristics of skin contacting mechanics during developing process of skin scratch trauma
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1. 概要(Summary)

We conducted scratch tests on the manufactured dummy skin and our obtained results point out the damage in the surface of dummy skin after scratching.

2. 実験(Experimental)

【利用した主な装置】

高精度電子線描画装置一式 (FESEM) 日本電子(株) 製 SPG-724

【実験方法】

A type of manufactured multilayer dummy skin was utilized in the experiments. Under several different preset contact states, we conducted a series of tests on the dummy skin. During the test, the dummy skin was scratched by a specific cuff model on a manipulator's end effector. After scratch tests, we observed the morphology of the dummy skin surface with Field Emission Scanning Electron Microscopy (FESEM).

3. 結果と考察(Results and Discussion)

The skin samples after different times of scratch were compared to each other during the observation under FESEM. After 12 times of scratch, the SEM micrograph of the scratch damaged region is shown in Fig. 1. Compared with the dummy skin surface before scratch tests (Fig. 2), it appears that an obvious wrinkle generated on the damaged skin surface shown in Fig. 1. The results confirm that the dummy skin manufactured in our lab and the experimental method utilized in our study is feasible to exhibit the different severities of scratch-induced damages that were developed under different experimental conditions.

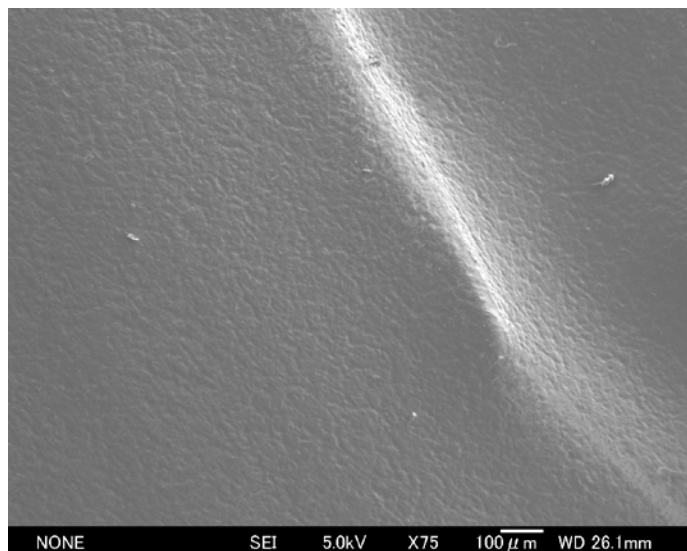


Fig.1 SEM micrograph of obviously damaged area on the dummy skin surface.

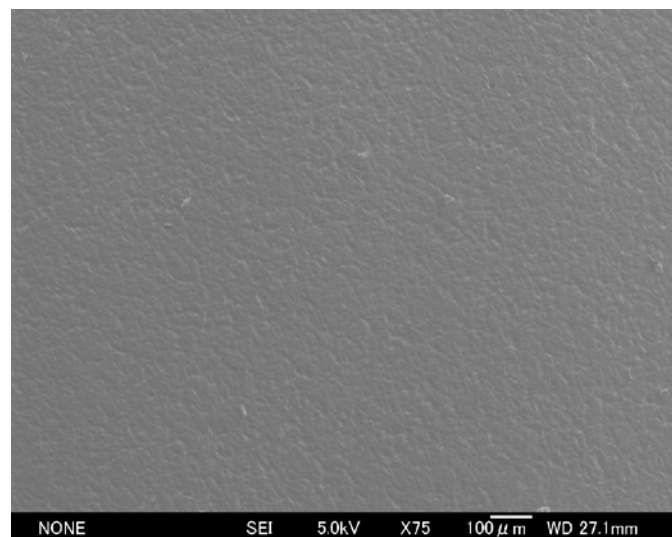


Fig.2 SEM micrograph of dummy skin surface before scratch tests.

4. その他・特記事項(Others)

なし。

5. 論文・学会発表(Publication/Presentation)

なし。

6. 関連特許(Patent)

なし。