〈報　告〉

シワ評価法に関する検討　第3報
——リングテストによるシワレプリカの評価——

赤崎　秀一[1,2,*], 岡野　由利[1,3], 小出　千春[1,4], 白石　泰規[1,5]
曽根　俊郎[1,6], 高橋　元次[1,7], 広瀬　統[1,8], 舛田　勇二[1,7]
松江　浩二[1,9], 松本　克夫[1,10], 宮本久喜三[1,11], 三村　邦雄[1,9]

Evaluation of Measurement Methodologies for Wrinkles on the Face　Part III
—"Ring-test"—Inter-laboratory validation for the measurement of a set of wrinkle replicas with different kinds of methodologies—

Syuichi AKAZAKI,[1,2] Yuri OKANO,[1,3] Chiharu KOIDE,[1,4] Hiroshi SHIRAISHI[1,5]
Toshiro SONE,[1,6] Motoji TAKAHASHI,[1,7] Osamu HIROSE,[1,8] Yuji MASUDA[1,7]
Kohji MATSUE,[1,9] Katsuo MATSUMOTO,[1,10] Kukizo MIYAMOTO,[1,11] Kunio MIMURA[1,9]

Abstract

　We studied inter-laboratory validation for the measurement of a set of wrinkle replicas with different kinds of methodologies at different study sites. A total 42 wrinkle replicas of crow's feet (besides the eye area) with various severities of wrinkles were collected at 7 laboratories and measured with selected methodologies at 8 study sites in order to compare those measured values. Measurement area and wrinkles of each replica were identified on its picture for the standardization purpose. Typical parameters about wrinkle structure, [Proportion of wrinkle area (RWA(%)), mean depth of wrinkles ($V_i(\mu \mathrm{m})$), mean depth of the deepest wrinkle ($V_{max}(\mu \mathrm{m})$), deepest point on the deepest wrinkle ($V_{max-max}(\mu \mathrm{m})$) and roughness parameters (Ra, Rz, Ry)], were measured with these methods. As a result, there was an excellent correlation in measured values with tested methods, but those absolute values were varied. It was considered that the measurement errors were caused by the difference of measurement principles and it's condition even among the same measurement principle. To minimize measurement errors among various types of methodologies in quantitative manner, establishment of the guideline for operational procedures in different methods of wrinkle measurement was recommended.

Key words: wrinkles, image analysis, roughness parameter, replica.