Investigation of a Measurement Problem on the Complex Surface by MicroScribe Digitizer and RHINO：Typified by The ...

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ABSTRACT

Higher requirements on the stylish appearance of the product demand the manufacturers must design the product in free form surface. In the duplication of some artifacts with irregular shape, which is hard to define in terms of dimension and tolerance and is originally designed through free form surface modeling, some techniques must be implemented and fitted with CAD system to reconstruct its geometric form. This research uses RHINO system to mimic the human hand artifact and investigate the problems, which could be encountered through the reconstruction process. These include shape complexity and irregularity and large size of the artifact, which cause the taking of measurement cannot be done in one measuring set up. We propose a solution to circumvent the problem by measuring the cloud points section by section and later use the coordinate measuring system to join all the patches of surfaces to reconstruct the hand surface model. The mimicking result looks promising.

Keywords : MicroScrible Digitizer ; RHINO 3D ; rotation and section-by-section measurement

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