

Digital Fabrication Methods for Transforming Everyday Materials into Visual and Haptic User Interfaces

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With the advent of an information-oriented society in recent years, information equipment has become overflowed in our surroundings. In addition, the miniaturization of computers has also progressed rapidly, making it easier to develop personal computers and to mount computers on small items. With this, scenes of displaying information and having a communication function have increased as opposed to what was not necessary to have the function of displaying information in the past. Most of these information devices have mechanisms for operation such as display and buttons. In most cases, however, these operating devices are made of glass or plastic, regardless of the surrounding texture. Therefore, in many cases, the surrounding texture is impaired. In this thesis, it is necessary to incorporate the texture of the surface of the display, which has been limited to transparent materials such as glass and plastics so far, and operation devices such as switches that were difficult to blend into the surrounding texture, we propose design method. Thinking that adding a sense of texture to the display that was limited in conventional materials would make it possible to add new functions to leather-covered cars and wooden furniture without damaging the original high-class feeling that it has. We succeeded in adding information display function without damaging the surface material of the display by simple processing using laser cutter or machining. Also, we could establish a design method of magnetic actuator with similar processing.

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