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[\[PDF \(715K\)\]](#) [\[References\]](#)**Femtosecond Pulse Laser-oriented Recording on Dental Prostheses: A Trial Introduction**[Tetsuo ICHIKAWA](#)<sup>1)</sup>, [Yoshio HAYASAKI](#)<sup>2)</sup>, [Keiji FUJITA](#)<sup>2)</sup>, [Kan NAGAO](#)<sup>1)</sup>, [Masayo MURATA](#)<sup>1)</sup>, [Takanori KAWANO](#)<sup>1)</sup> and [JianRong CHEN](#)<sup>1)</sup>

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**Abstract:**

The purpose of this study was to evaluate the feasibility of using a femtosecond pulse laser processing technique to store information on a dental prosthesis. Commercially pure titanium plates were processed by a femtosecond pulse laser system. The processed surface structure was observed with a reflective illumination microscope, scanning electron microscope, and atomic force microscope. Processed area was an almost conical pit with a clear boundary. When laser pulse energy was 2 $\mu$ J, the diameter and depth were approximately 10 $\mu$ m and 0.2 $\mu$ m respectively — whereby both increased with laser pulse energy. Further, depth of pit increased with laser pulse number without any thermal effect. This study showed that the femtosecond pulse processing system was capable of recording personal identification and optional additional information on a dental prosthesis.

**Key words:**[Femtosecond pulse laser](#), [Titanium](#), [Forensic dentistry](#)[\[PDF \(715K\)\]](#) [\[References\]](#)Download Meta of Article [\[Help\]](#)

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