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[\[Image PDF \(964K\)\]](#) [\[References\]](#)**Titanium Casting Using Commercial Phosphate-bonded Investments with Quick Heating Method**[Min YAN](#)¹⁾ and [Hidekazu TAKAHASHI](#)²⁾

1) Institute of Oral Materials Science, Chung Shan Medical University

2) Advanced Biomaterials, Department of Restorative Sciences, Division of Oral Health Sciences Graduate School, Tokyo Medical and Dental University

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Abstract:

The purpose of this study was to investigate the possible use of quick heating method for titanium casting using two commercial investments (Rematitan Plus and Tancovest). The resulting characteristics of the investments with the quick heating method were as follows: residual thermal expansion at the casting temperature was in the range of 0.39 to 0.64%; green strength and fired strength ranged from 4.4 to 10.3 MPa and from 13.8 to 17.6 MPa, respectively. Five full crown titanium castings from each casting condition were obtained using an argon arc melting and gas pressure casting machine. The thickness of cast surface reaction layer was approximately 200 μ m, regardless of heating methods or investments. Further, the heating method did not significantly influence either the accuracy or surface roughness of the titanium castings. These results therefore suggested that these commercial investments for titanium could be used for the quick heating method.

Key words:[Titanium](#), [Dental investment](#), [Quick heating method](#)[\[Image PDF \(964K\)\]](#) [\[References\]](#)Download Meta of Article [\[Help\]](#)[RIS](#)

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