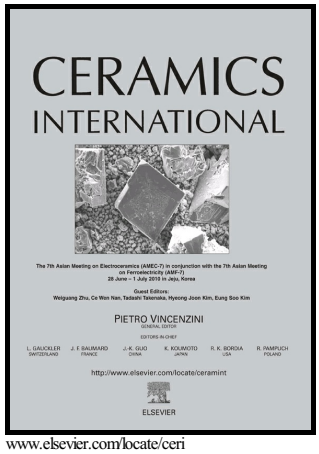

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Sintering effect on microstructural evolution and mechanical properties of spark plasma sintered Ti matrix composites reinforced by reduced graphene oxides

L.L. Dong[a], B. Xiao[a, b], Y. Liu[a], Y.L. Li[a], Y.Q. Fu[c], Y.Q. Zhao[a], Y.S. Zhang[a*]

[a]Advanced Materials Research Central, Northwest Institute for Nonferrous Metal Research, Xi'an 710016, China

[b]School of Materials Science and Engineering, Northwestern Polytechnical University, Xi'an 710072, China

[c]Faculty of Engineering and Environment, Northumbria University, Newcastle upon Tyne, NE1 8ST, UK.

[*]Corresponding author: y.sh.zhang@163.com, y.s.zhang@c-nin.com

Abstract:

Ti matrix composites reinforced with 0.6 wt.% reduced graphene oxide (rGO) sheets were fabricated using spark plasma sintering (SPS) technology at different sintering temperatures from 800 ^{o}C to 1100 ^{o}C. Effects of SPS sintering temperature on microstructural evolution and mechanical properties of rGO/Ti composites were studied. Results showed that with an increase in the sintering temperature, the relative density and densification of the composites were improved. The Ti grains were apparently refined owing to the presence of rGO. The optimum sintering temperature was found to be 1000 ^{o}C with a duration of 5 min under a pressure of 45 MPa in