

## Accepted Manuscript

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PII: S0167-577X(18)30291-X  
DOI: <https://doi.org/10.1016/j.matlet.2018.02.077>  
Reference: MLBLUE 23903

To appear in: *Materials Letters*

Received Date: 26 June 2017  
Revised Date: 4 February 2018  
Accepted Date: 18 February 2018



Please cite this article as: C. Lu, L. Sun, Q. Qi, J. Zhang, G. Hug, Wetting behaviors of the  $\text{Ti}_2\text{AlC}$  ceramics by nickel and aluminum fillers, *Materials Letters* (2018), doi: <https://doi.org/10.1016/j.matlet.2018.02.077>

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## Wetting behaviors of the Ti<sub>2</sub>AlC ceramics by nickel and aluminum fillers

Chengjie Lu<sup>1,2</sup>, Liangbo Sun<sup>1</sup>, Qin Qi<sup>1</sup>, Jie Zhang<sup>1,\*</sup>, Gilles Hug<sup>2</sup>

<sup>1</sup>*School of Materials Science and Engineering, Harbin Institute of Technology, Harbin 150001, China*

<sup>2</sup>*Laboratoire d'Études des Microstructures, CNRS-ONERA, Châtillon 92322, France*

### Abstract

In the present work, the behaviors of nickel and aluminum based fillers on the Ti<sub>2</sub>AlC ceramics are studied by wetting experiments and characterization of the interface cross-section. The results show that the two kinds of fillers possess different wettability on the Ti<sub>2</sub>AlC ceramics: the contact angle of the nickel fillers decreases continuously with rising temperature and reaches less than 20° finally, whereas that of the aluminum fillers remains larger than 135° in the full temperature range investigated. The characterization of the interface from cross-section observations reveals the presence of an interaction layer in the Ti<sub>2</sub>AlC ceramic substrate, which promotes the wetting process.

**Keywords:** MAX phases; wetting; interface; reaction

### 1. Introduction

In recent years, a group of nanolaminate ternary carbide or nitride ceramics have attracted considerable attention from researchers because of their excellent combination of metal and ceramic properties [1, 2]. They have been systematically

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\* Corresponding author: Tel/Fax: +86 451 86414234

E-mail address: hitzhangjie@hit.edu.cn (J. Zhang).

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