

## Title (en)

BOND LAYERS FOR CERAMIC OR CERAMIC MATRIX COMPOSITE SUBSTRATES

## Title (de)

BINDUNGSSCHICHTEN FÜR KERAMISCHE ODER KERAMIKMATRIXVERBUNDSSUBSTRATE

## Title (fr)

COUCHES DE LIAISON POUR DES SUBSTRATS CÉRAMIQUES OU EN COMPOSITE À MATRICE CÉRAMIQUE

## Publication

**EP 2688858 A1 20140129 (EN)**

## Application

**EP 12714117 A 20120322**

## Priority

- US 201161466556 P 20110323
- US 2012030174 W 20120322

## Abstract (en)

[origin: WO2012129431A1] A bond layer may include a composition that may be stable at temperatures above about 1410° C. An article may include a substrate, a bond layer formed on the substrate, and an overlayer formed over the bond layer. In some examples, the bond layer may include a substantially homogeneous mixture of Si and at least one of SiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, ZrO<sub>2</sub>, a rare earth oxide, ZrSiO<sub>4</sub>, TiO<sub>2</sub>, Ta<sub>2</sub>O<sub>5</sub>, B<sub>2</sub>O<sub>3</sub>, an alkali metal oxide, or an alkali earth metal oxide. In other examples, the bond layer may include Si, an alkali metal oxide, and at least one of SiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, ZrO<sub>2</sub>, HfO<sub>2</sub>, a rare earth oxide, ZrSiO<sub>4</sub>, HfSiO<sub>4</sub>, TiO<sub>2</sub>, Ta<sub>2</sub>O<sub>5</sub>, B<sub>2</sub>O<sub>3</sub>, or an alkali earth metal oxide. In other examples, the bond layer may include B<sub>2</sub>O<sub>3</sub>.

## IPC 8 full level

**C04B 41/89** (2006.01); **F01D 5/28** (2006.01)

## CPC (source: EP US)

**C04B 41/009** (2013.01 - EP US); **C04B 41/52** (2013.01 - EP US); **C04B 41/89** (2013.01 - EP US); **C23C 28/04** (2013.01 - EP US); **F01D 25/005** (2013.01 - US)

## C-Set (source: EP US)

## EP

1. **C04B 41/009 + C04B 35/565 + C04B 35/806**
2. **C04B 41/009 + C04B 35/584 + C04B 35/806**
3. **C04B 41/52 + C04B 41/5027 + C04B 41/5096**
4. **C04B 41/52 + C04B 41/5006 + C04B 41/5096 + C04B 41/522**
5. **C04B 41/52 + C04B 41/4529 + C04B 41/5035 + C04B 41/5042 + C04B 41/5045 + C04B 41/5096 + C04B 41/522**
6. **C04B 41/52 + C04B 41/502 + C04B 41/5042**
7. **C04B 41/52 + C04B 41/5024 + C04B 41/522**
8. **C04B 41/52 + C04B 41/5024 + C04B 41/5096 + C04B 41/522**
9. **C04B 41/52 + C04B 41/5031 + C04B 41/5035 + C04B 41/5045 + C04B 41/522**

## US

1. **C04B 41/52 + C04B 41/5027 + C04B 41/5096**
2. **C04B 41/52 + C04B 41/5006 + C04B 41/5096 + C04B 41/522**
3. **C04B 41/52 + C04B 41/4529 + C04B 41/5035 + C04B 41/5042 + C04B 41/5045 + C04B 41/5096 + C04B 41/522**
4. **C04B 41/52 + C04B 41/502 + C04B 41/5042**
5. **C04B 41/52 + C04B 41/5024 + C04B 41/522**
6. **C04B 41/52 + C04B 41/5024 + C04B 41/5096 + C04B 41/522**
7. **C04B 41/52 + C04B 41/5031 + C04B 41/5035 + C04B 41/5045 + C04B 41/522**

## Citation (search report)

See references of WO 2012129431A1

## Citation (examination)

- WO 2007098152 A2 20070830 - LEE KANG N [US]
- WO 0064836 A1 20001102 - GEN ELECTRIC [US]
- EP 1925694 A2 20080528 - UNITED TECHNOLOGIES CORP [US]

## Designated contracting state (EPC)

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## DOCDB simple family (application)

**US 2012030174 W 20120322**; EP 12714117 A 20120322; US 201214006848 A 20120322