WC-Co 超硬合金の粒成長に対する Ti(C,N) 粒子分散の抑制効果

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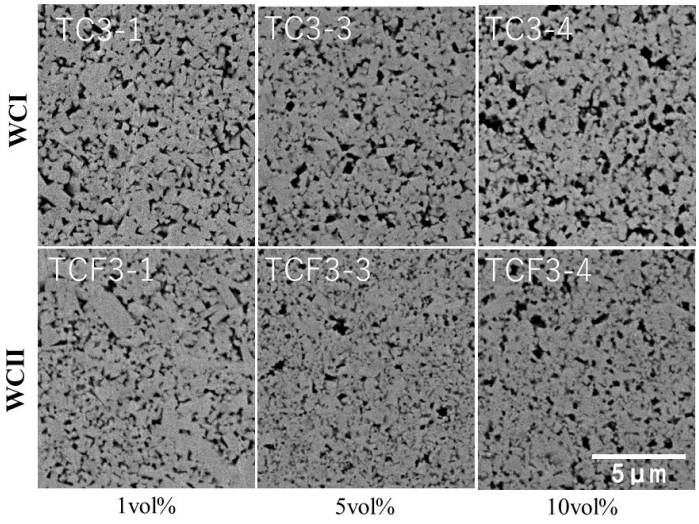

Fig.3 SEM microstructures of WCI, II-1~10vol%Ti(C,N)III-Co alloys

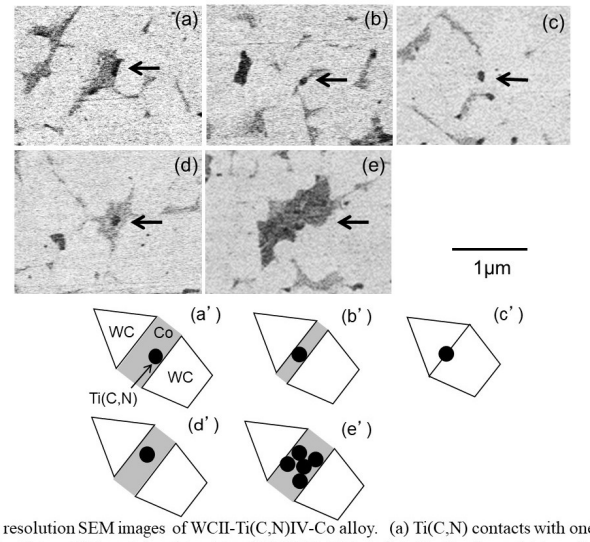

Fig.8 High resolution SEM images of WCII-Ti(C,N)IV-Co alloy. (a) Ti(C,N) contacts with one WC particle, (b) with two WC particles, (c) exists at WC/WC, (d) is isolated in Co phase, (e) is agglomerated. (a'-e') are the schematic drawings corresponding to (a-e) .

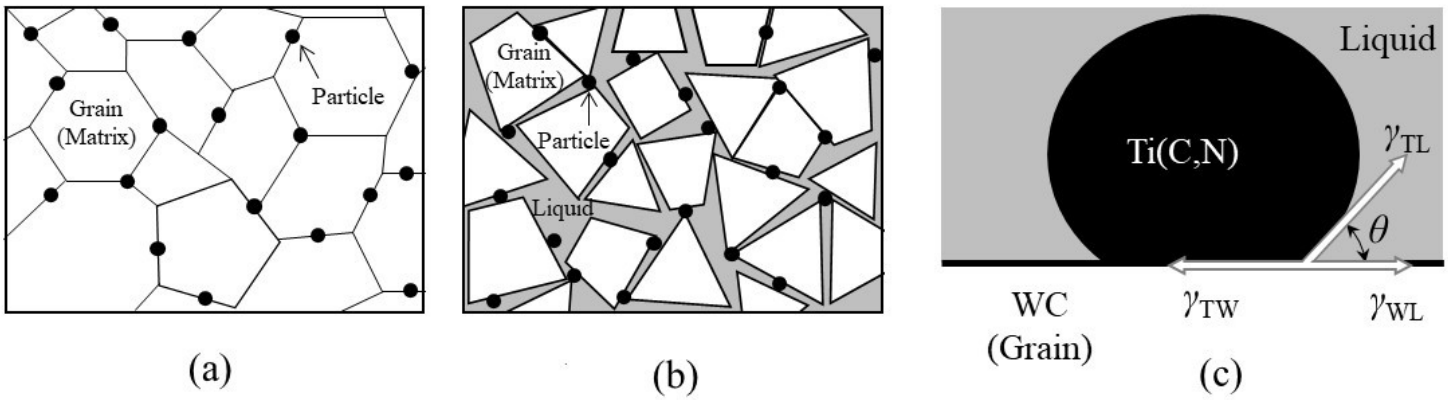

Fig.9 Schematic drawing of pinning effect by the second solid phase on grain growth. (a) solid state, (b) under the presence of liquid phase, (c) relationship among γ_{TW}, γ_{WL} and γ_{TL}.