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## Novel approach to the fabrication of alumina self-lubricating composites

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Alumina matrix composites are promising wear-resistance components because of their superior strength, hardness, corrosion resistance, and anti-wear. However, the industrial applications of these materials is limited by their poor lubricating property, as indicated by their high friction coefficient under dry sliding conditions. The incorporation of solid lubricant in ceramic matrixes remains challenging because high temperature during ceramic sintering cause solid lubricant melt or even decompose. In the present study, we designed a novel approach to introduce the lubricant into a sintered alumina ceramic matrix. A series of alumina matrix self-lubricated composites was fabricated. The influence of macro/micro structures on the properties of materials was investigated by SEM, EDS, 3D profile, universal testing machine and friction and wear tester. The results show that the developed composites have much higher reliability, and also have good self-lubricating ability.

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