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| **Abstract:** |  |
| The effects of dwelling time (5,10,15 and 20 min) on the microstructure, phase formation and mechanical properties of cemented carbide and high strength steel composites were investigated by SPS. The results showed that with the increase of the dwelling time, the sintering quality was gradually improved, and the bonding interface was smooth and continuous, and there was no obvious crack and delamination. The XRD results showed that WC, Fe and Fe, Co phases existed in the microstructure of the composites when the dwelling time was 5 min. When the dwelling time increased to 20 min, a new W2 C phase was clearly formed. With the increase in dwelling time, micro- hardness and tensile strength showed an increasing trend. When holding time was 20 min, the strain when the maxi- mum tensile strength is 152 MPa was only 0.22, and the maximum micro-hardness was 1 763 MPa. | |