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| **Abstract:** |  |
| In this study we examined the effects of compaction pressure for bonding nanocrystalline cemented tungsten carbide (WC-10Co) and high-strength steel (AISI4340) and successfully fabricated a bilayered composite of ceramic and steel. The obtained results were compared with our previous studies, and then the optimized sintering conditions were suggested. The compaction pressure examined varied from 120–200 MPa at 1150°C for 20 min. The study shows that the change in experimental parameters has significant effects on both the sintering properties of nanocrystalline WC-10Co powders and their bonding with AISI4340 steel. The microstructure reveals a successful metallurgical bonding between ceramic and steel. Bonding temperature determines, to a great extent, the diffusion processes across the bonding interface and has found to be the most influential variable compared to sintering time and compaction pressure. The obtained average maximum bonding strength of the bimetal composite is 226 MPa, which is higher than that of previous studies. | |