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Mohammed Qasim Kareem^{a,b,*}, Tamás Mikó^a, Gréta Gergely^a, Zoltán Gácsi^a

^aInstitute of Physical Metallurgy, Metalforming and Nanotechnology, University of Miskolc, Hungary.

^bCivil Engineering Department, College of Engineering, Al-Qasim Green University, Babylon 51013, Iraq

Alternative method to achieve full density in a short time for hard stainless-steel powdered materials

The density, compressive strength, and microstructure of hard stainless steel powdered materials produced by cold pressing followed by induction sintering were investigated to evaluate the effects of various factors, including cold pressing pressure, induction sintering temperature, and time. The challenge lies in producing high-density hard stainless steel powdered materials with high strength properties using the shortest sintering time, rather than a long sintering time with electrical sintering. The evaluation procedures included Archimedes' density method, microstructure observations, Vickers hardness measurements, and compression strength tests. The results showed improved physical and mechanical properties using induction sintering.

Biography

Mohammed Qasim Kareem completed his master's degree at the age of 25 from South-Russian State Polytechnic University, Russia, and his PhD at the age of 34 from Miskolc University, Hungary. He has published more than 12 papers in reputed journals in the field of improving electromechanical properties of commercial aluminum alloys and developing new technology to enhance the densification properties of precipitation-hardened stainless steel materials.