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ROZPRAWA DOKTORSKA

Biodegradowalne stopy magnezu z dodatkiem pierwiastków ziem rzadkich do zastosowań  
medycznych wykonane metodą metalurgii proszków

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## **Abstract**

Magnesium-based alloys are popular due to their attractive mechanical and biological properties, which can be used to produce biodegradable materials for medical applications. High requirements, such as biotolerance, mechanical properties, corrosion resistance, imposed on biomaterials prompt the search for alternative solutions. Powder metallurgy methods including mechanical synthesis (MA), forming, and sintering by spark plasma sintering (SPS) allow to obtain materials with appropriate structure, mechanical properties and corrosion resistance. An alloy based on magnesium with additions of calcium, zinc, and rare earth elements (Pr, Er) was developed and produced. The structure, physicochemical and mechanical properties of the produced alloys were examined. The methodology used is an interesting alternative to currently used biomaterials and opens new research opportunities.