Recent studies have significantly advanced our understanding of the hydrogen storage capabilities of LaNi5 and TiFe powders, highlighting their potential for energy applications. According to Liu et al., TiFe alloys, including TiFeH2, demonstrate effective hydrogen storage characteristics, making them suitable for use in various applications, such as submarine hydrogen tanks and fuel cell systems (Ref-u936051). Additionally, research by Lin et al. indicates that the particle size and porosity of LaNi5 significantly impact its hydrogen absorption performance, with smaller particles and higher porosity enhancing the absorption reaction due to increased surface area and thermal diffusion (Ref-u936051). The integration of rare earth elements such as La and Ce with TiFe has been shown to improve hydrogen absorption rates and storage capacity, as demonstrated by Alam et al., who explored mechanical milling techniques to enhance these properties (Ref-u936051). These findings underscore the technological advancements in optimizing LaNi5 and TiFe powders for efficient hydrogen storage, paving the way for their broader application in sustainable energy systems.