

We have synthesized Mg based nanoparticles (NPs) by the solution plasma process (SPP) for the hydrogen storage application. Size of the NPs is less than 20 nm. Most of the Mg NPs is stable under the atmosphere. On the other hand, Ni nanoparticles were oxidized during the handling in the air. TEM image reveals that Mg NPs are covered with carbon NPs which protects Mg NPs against air oxidation.

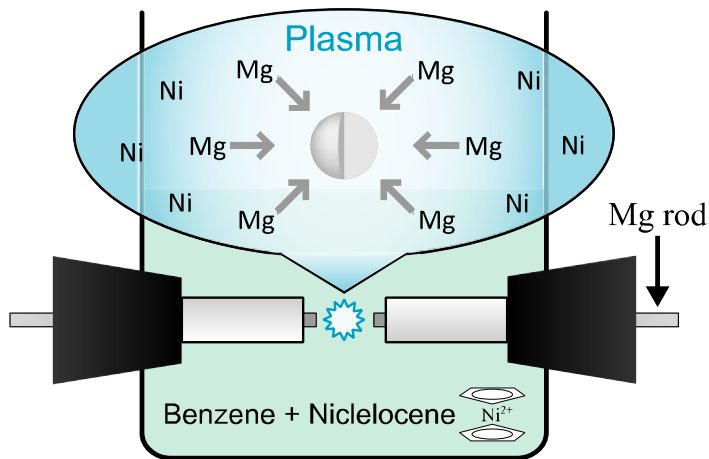


Fig. 1. Schematic view of the solution plasma synthesis of Mg-Ni composite NPs.

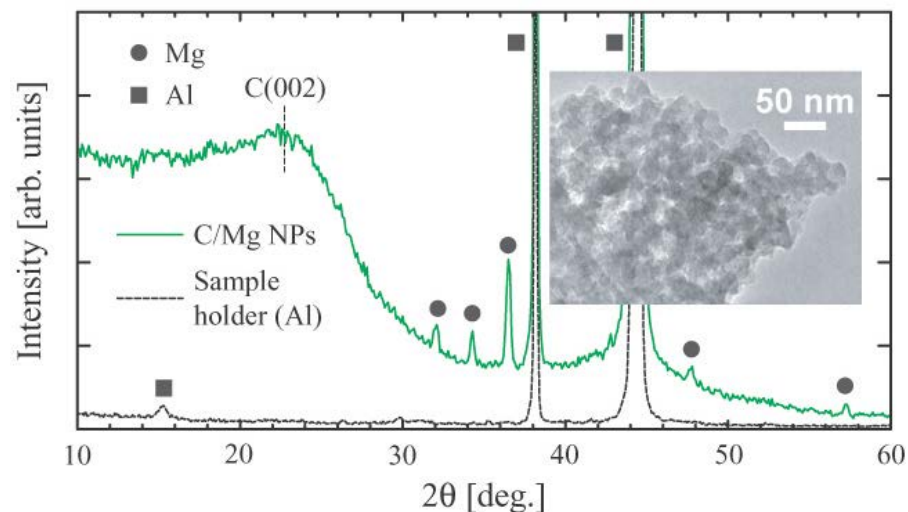
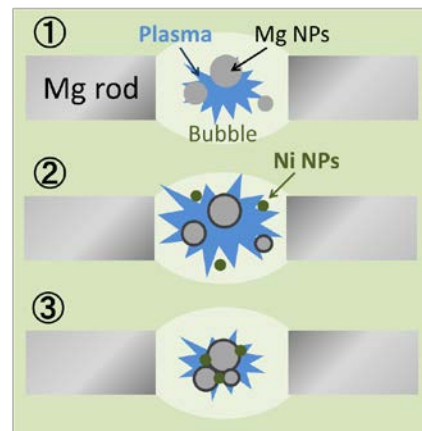


Fig. 2. XRD pattern of the Mg NPs. The inset figure shows the TEM image of the Mg NPs.



- ① Mg atoms are evaporated and aggregated into NPs.
- ② Nickelocene is reduced and C and Ni NPs are formed.
- ③ Mg nanoparticles are covered with C and Ni NPs.