

图 2 采用图1设备制备的不同金属纳米粉体图片
Different metal nanometer powders made by our production line

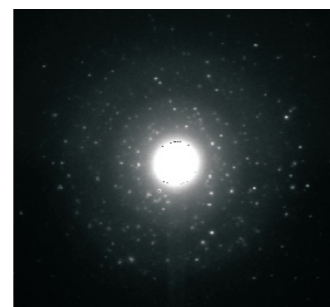
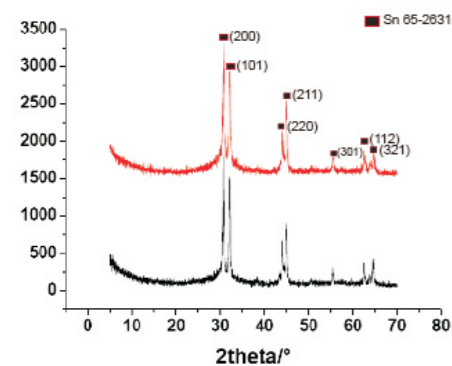
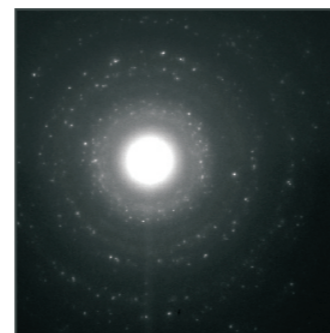
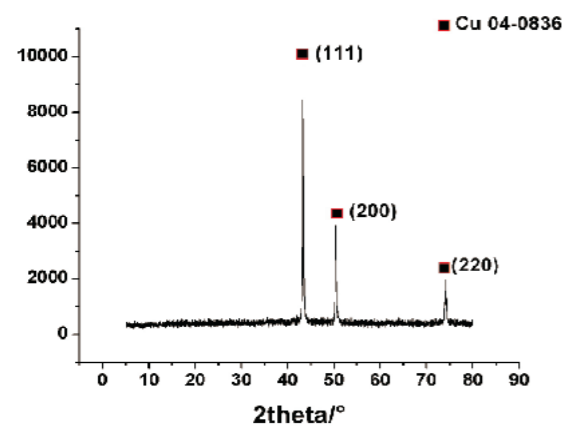
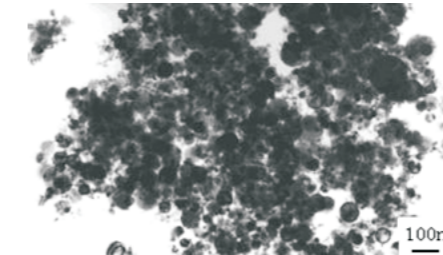


图3 采用图1设备制备的不同金属纳米粉体的XRD、EDS分析图片
XRD、EDS Image Analysis of Different metal nanometer powders made by our production line

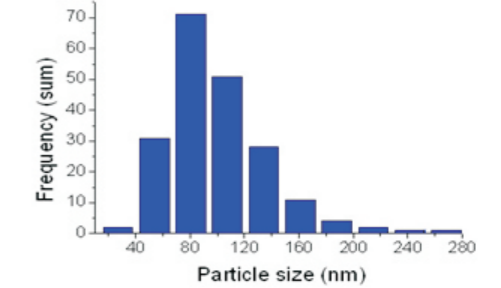
纳米级镍粉FNiN

外观：不同粒度纳米镍粉呈灰黑色至黑色，无其他颜色混杂，球形，无明显结块。

Appearance: Nano nickel at different particle sizes looks black grey or black, sphere, without obvious clusters



纳米镍粉TEM测试结果
Nano-nickel powder TEM test results



纳米镍粉粒度分布测试结果
Nano-nickle particle distribution test result

用途USAGES:

1. 高效助燃剂。将纳米镍粉添加到火箭的固体燃料推进剂中可大幅度提高燃料的燃烧热、燃烧效率,改善燃烧的稳定性。

Efficacious comburent: Adding nickel nanoparticle into the solid fuel propellant of rocket increases combustion heat, combustion efficiency and combustion stability.

2. 导电浆料。电子浆料广泛应用于微电子工业中的布线、封装、连接等,对微电子器件的小型化起着重要作用。用镍、铜、铝纳米粉体制成的电子浆料性能优越,有利于线路进一步微细化。

Conductive paste: Electronic size is widely used for wiring, packaging and connection in microelectronic industry, it plays an important role in the minimization of electronic device. The electronic paste made of nickel, copper and aluminum nanoparticle has good performance, and it helps further minimize the circuit.

3. 磁流体。用铁、钴、镍及其合金粉末生产的磁流体性能优异,广泛应用于密封减震、医疗器械、声音调节、光显示等

Magnetic fluid: The magnetic fluid made of iron, cobalt, nickel and its alloy particles provide excellent properties, they are widely used in seal shock absorption, medical equipment, acoustic adjustment, optical display, etc.

4. 高效催化剂。由于比表面巨大和高活性,纳米镍粉具有极强的催化效果,可用于有机物氢化反应、汽车尾气处理等。

Efficacious catalyzer: Due to its large surface and high activity, nickel nanometer has good catalyzing effect, it is applicable to organic hydrogenation reaction, tail gas processing, etc.

5. 高性能电极材料。用纳米镍粉加以适当工艺,能制造出具有巨大表面积的电极,可大幅度提高放电效率。

High-performance electrode: Through proper processes nickel nanoparticle can be made into electrode with huge surface, which considerably improves discharge efficiency.

6. 活化烧结添加剂。纳米粉末由于表面积和表面原子所占比例都很大,所以具有高的能量状态,在较低温度下便有强的烧结能力,是一种有效的烧结添加剂,可大幅度降低粉末冶金产品和高温陶瓷产品的烧结温度。

Actuating sintering additive: As nanoparticle has large surface and superficial atom ratio, it is in high-energy state, it has good sintering ability even under low temperature, it is an efficacious sintering additive, which substantially lowers the sintering temperature of particle metallurgy products and high-temperature ceramic products.