

# PAJARITO POWDER

## Engineered Catalyst Supports™ (ECS)



Pajarito Powder develops and manufactures advanced Engineered Catalyst Supports™ (ECS) for PGM catalysts. The well-documented properties of Interconnected Mesoporous Carbons (IMCs) enhance electron transport, stabilize PGM nanoparticles, prevent agglomeration, improve catalyst stability and durability. The morphology of these graphitic materials are tunable to system parameters, resulting in higher overall system performance.

### Graphitic ECS Materials

Pajarito Powder's highly graphitic ECS materials feature ~400 m<sup>2</sup>/g surface areas and G/D > 1.

Fig. A Exhibits tunable pore size properties for highly graphitic materials.

Fig. B Nitrogen isotherm shows the range of surface areas and pore volumes possible across two graphitic ECS products.

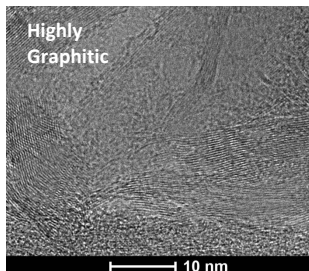


Fig. A

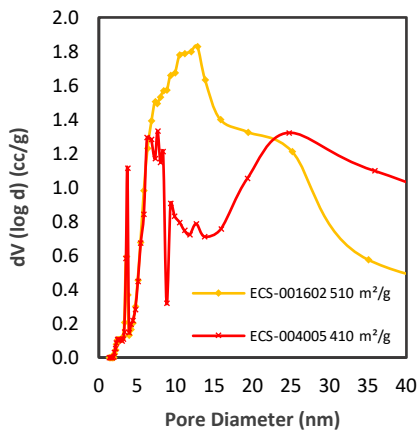
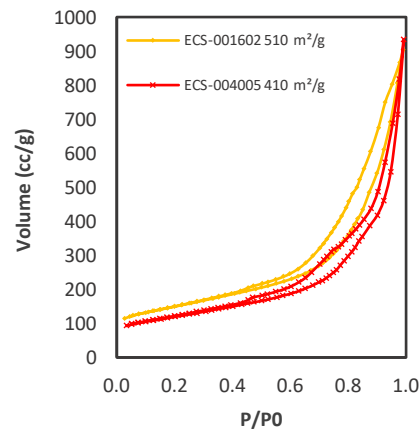


Fig. B



### Mesoporous ECS Materials

Pajarito Powder manufactures mesoporous and metal-doped mesoporous materials with medium levels of graphiticity, 600-900 m<sup>2</sup>/g and G/D ~1, and a range of characteristics for different systems requirements.

Fig. C Exhibits highly tunable pore size and distribution, including 5.5-8 nm mesopores, with unimodal or bimodal pore size distribution.

Fig. D Nitrogen isotherms show range of surface areas and pore volumes possible across several product lines.

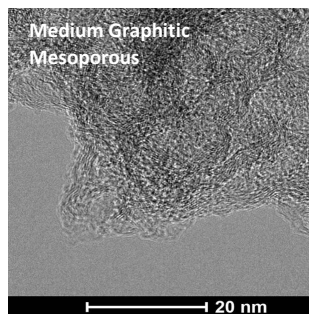


Fig. C

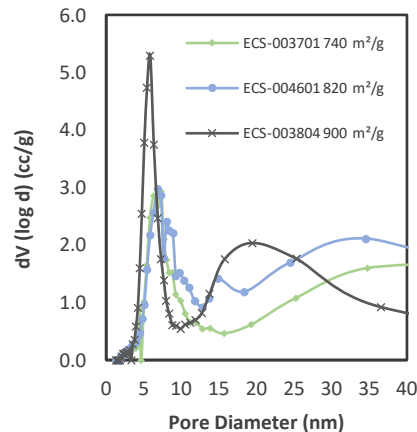
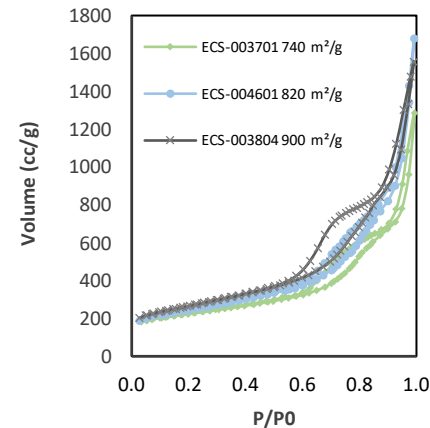


Fig. D



### Engineered Catalyst Supports™

Graphitic	Surface Area BET (± 20 m <sup>2</sup> /g)	Primary Pore Size BJH (±0.3 nm)
ECS-001602	500 m <sup>2</sup> /g	9 nm
ECS-004005	400 m <sup>2</sup> /g	8 nm & 32 nm
Mesoporous		
ECS-003701	725 m <sup>2</sup> /g	7 nm & 35 nm
ECS-004601	875 m <sup>2</sup> /g	7 nm & 35 nm
ECS-003604	725 m <sup>2</sup> /g	5.5 to 6 nm
ECS-003804	900 m <sup>2</sup> /g	6 nm

Fig. E

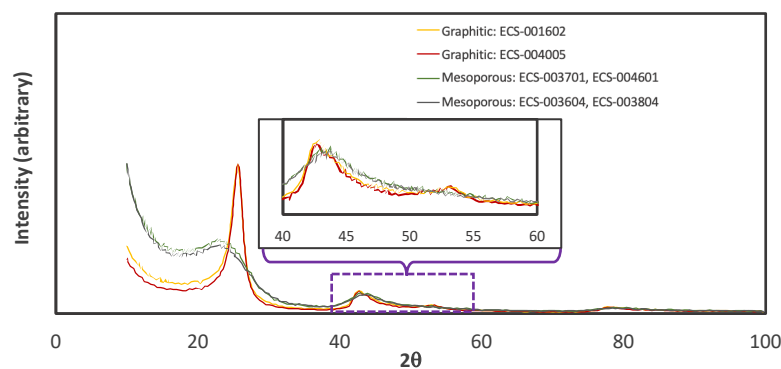
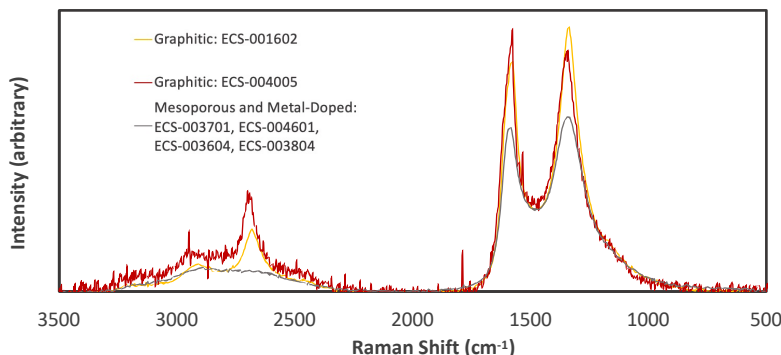


Fig. F



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