

碳纳米材料

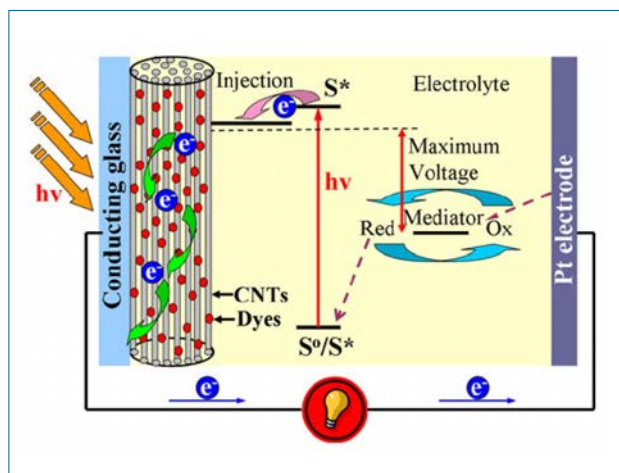
CARBON NANOMATERIALS

3A 碳纳米材料


3A化学提供多种碳纳米管和石墨烯产品助力多领域科学研究

 规格多样，满足科研多样化需求


 纯度高、均一性好

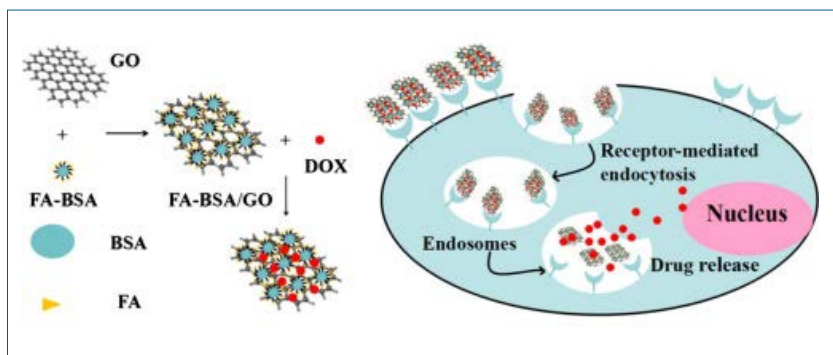
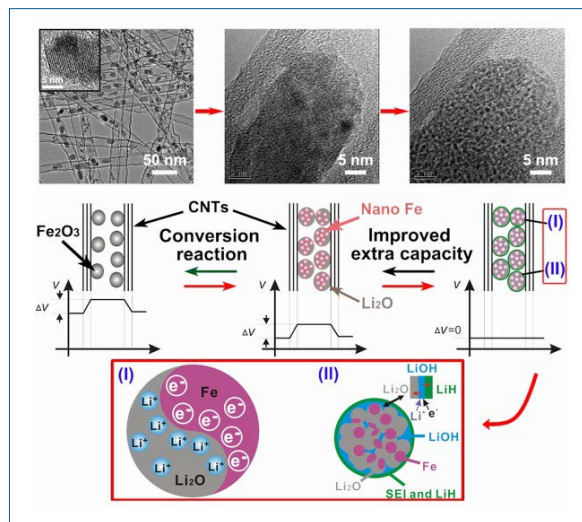


碳纳米管侧壁碳原子主要以 sp^2 杂化为主，具有大量高度离域的 π 电子体系。这些 π 电子体系与染料分子的 π 电子体系通过 $\pi-\pi$ 键的作用得到染料修饰的碳纳米管。这样在染料敏化太阳能电池中，当染料捕获太阳能后，电子直接通过碳纳米管传输，降低电子-空穴复合几率，从而提高光电转换效率。


 **参考文献:** Zhao W, Basnet B, Kim I J. Carbon nanotube formation using zeolite template and applications[J]. Journal of Advanced Ceramics, 2012, 1(3):179-193.

碳纳米管(CNT)纳米空腔可作为独特的纳米反应器，在CNT内可控填充 Fe_2O_3 纳米粒子，制备得到了CNT限域 Fe_2O_3 纳米粒子复合电极材料，当用作锂离子电池负极时，限域在CNT内的 Fe_2O_3 表现出高达 2071 mA h g^{-1} 的比容量。


 **参考文献:** Yu W, Zhang L, Hou P, et al. High Reversible Lithium Storage Capacity and Structural Changes of Fe_2O_3 Nanoparticles Confined inside Carbon Nanotubes[J]. Advanced Energy Materials, 2016, 6(3)

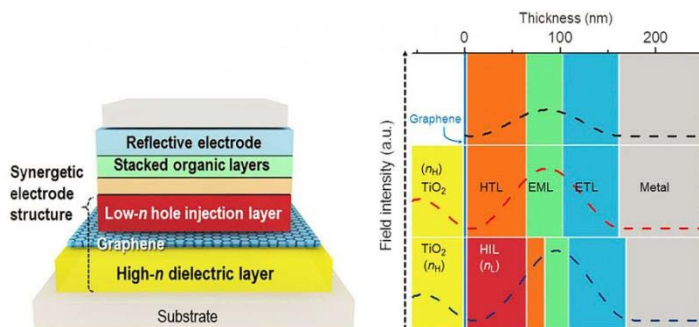


叶酸偶联牛血清蛋白修饰的氧化石墨烯负载DOX，表现出优异的药物传递和缓释功能。

 **参考文献:** Ma N, Liu J, He W, et al. Folic acid-grafted bovine serum albumin decorated graphene oxide: An efficient drug carrier for targeted cancer therapy[J]. J Colloid Interface Sci, 2017, 490:598-607.

石墨烯 (Graphene) 是一种由碳原子以SP²杂化轨道组成六角型呈蜂巢晶格的二维碳纳米材料, 具有优异的光学、热学、力学和导电等性能。石墨烯用在柔性OLED的透明电极中, 表现出优异的光电转换效率。

 **参考文献:** Graphene-based transparent electrodes for highly efficient flexible OLEDs, Released by The Korea Advanced Institute of Science and Technology (KAIST)



石墨烯

货号	品名	纯度规格	包装
A60001	石墨烯 Graphene	>98wt% Thickness:1-3nm Size:>50 μ m Layers:<3 SSA:100-200m ² /g	500mg 1g
A60002	石墨烯 Graphene	>98wt% Thickness:0.55-3.74nm Size:0.5-3 μ m Layers:<10 SSA:500-1000m ² /g	250mg 1g
A60003	羧基化石墨烯 Graphene -COOH functional	>98wt% Thickness:0.55-3.74nm Size:0.5-3 μ m Layers:<10	500mg 1g
A60004	氨基化石墨烯 Graphene -NH ₂ functional	>98wt% Thickness:0.55-3.74nm Size:0.5-3 μ m Layers:<10	500mg 1g
A60005	羟基化石墨烯 Graphene -OH functional	>98wt% Thickness:0.55-3.74nm Size:0.5-3 μ m Layers:<10	250mg 1g
A60006	氧化石墨烯 Graphene oxide	>98wt% Size:8-15 μ m Layers:1-2	500mg 1g
A60007	氧化石墨烯 Graphene oxide	>98wt% Size:1-5 μ m Layers:1-2	500mg 1g
A60008	氧化石墨烯 Graphene oxide	>98wt% Size:>50 μ m Layers:1-2	500mg 1g
A60009	氧化石墨烯 Graphene oxide	>99wt% Thickness:0.55-1.2nm Size:0.5-3 μ m Layers:<3	250mg 1g
A60010	氮掺杂石墨烯 Nitrogen-doped graphene	>98wt% Thickness:1-3nm Size:2-10 μ m Layers:<3 SSA:100-300m ² /g	500mg 1g
A60011	高导电石墨烯 High electrical conductivity graphene	>98wt% Size:8-15 μ m Layers:<3 SSA:70-110m ² /g	500mg 1g
A60012	高导电石墨烯 High electrical conductivity graphene	>98wt% Size:1-5 μ m Layers:<3 SSA:50-80m ² /g	500mg 1g
A60013	高导电石墨烯 High electrical conductivity graphene	>98wt% Size:>50 μ m Layers:<3 SSA:110-170m ² /g	500mg 1g
A60014	高导电石墨烯 High electrical conductivity graphene	>98wt% Size:0.06-0.12 μ m Layers:<10 SSA:150-200m ² /g	1g 5g

单壁碳纳米管

货号	品名	纯度规格	包装
A60079	单壁碳纳米管 Single-walled carbon nanotubes	>95wt% OD:<2nm Length:5-30 μ m SSA:>690m ² /g	250mg 1g 5g

单壁碳纳米管

货号	品名	纯度规格	包装
A60080	单壁碳纳米管 Single-walled carbon nanotubes	>95wt% OD:<2nm Length:1-3 μ m SSA:>670m ² /g	250mg 1g 5g
A60081	单壁碳纳米管 Single-walled carbon nanotubes	>90wt% OD:1-2nm Length:5-30 μ m SSA:>380m ² /g	250mg 1g
A60082	单壁碳纳米管 Single-walled carbon nanotubes	>90wt% OD:1-2nm Length:1-3 μ m SSA:>340m ² /g	250mg 1g
A60083	单壁碳纳米管 Single-walled carbon nanotubes	>95wt% OD:<2nm Length:5-30 μ m SSA:>490m ² /g	250mg 1g
A60084	大比表面积单壁碳纳米管 Large surface area single-walled carbon nanotubes	>95wt% OD:<2nm Length:5-30 μ m SSA:>1075m ² /g	250mg 1g
A60085	羧基化单壁碳纳米管 Single-walled carbon nanotubes -COOH functional	>95wt% OD:<2nm Length:1-3 μ m	250mg 1g 5g
A60086	羧基化单壁碳纳米管 Single-walled carbon nanotubes -COOH functional	>95wt% OD:<2nm Length:5-30 μ m	250mg 1g
A60087	羧基化单壁碳纳米管 Single-walled carbon nanotubes -COOH functional	>90wt% -COOH:2.73wt% OD:1-2nm Length:1-3 μ m SSA:>380m ² /g	250mg 1g
A60088	氨基化单壁碳纳米管 Single-walled carbon nanotubes -NH ₂ functional	>95wt% OD:<2nm Length:5-30 μ m	250mg 1g
A60089	羟基化单壁碳纳米管 Single-walled carbon nanotubes -OH functional	>95wt% OD:<2nm Length:1-3 μ m SSA:>630m ² /g	250mg 1g
A60090	羧基化高纯单壁碳纳米管 Single-walled carbon nanotubes -COOH functional	>90wt% -COOH:2.73wt% OD:1-2nm Length:5-30 μ m SSA:>320m ² /g	250mg 1g
A60091	羟基化高纯单壁碳纳米管 Single-walled carbon nanotubes -OH functional	>90wt% -OH:3.96wt% OD:1-2nm Length:5-30 μ m SSA:>300m ² /g	250mg 1g
A60092	羟基化单壁碳纳米管 Single-walled carbon nanotubes -OH functional	>95wt% OD:<2nm Length:5-30 μ m	250mg 1g
A60093	羟基化单壁碳纳米管 Single-walled carbon nanotubes -OH functional	>90wt% -OH:3.96wt% OD:1-2nm Length:1-3 μ m SSA:>380m ² /g	250mg 1g

多壁碳纳米管

货号	品名	纯度规格	包装
A60015	多壁碳纳米管 Multi-walled carbon nanotubes	>98wt% OD:4-6nm Length:10-20 μ m SSA:500-700m ² /g	1g 5g
A60016	多壁碳纳米管 Multi-walled carbon nanotubes	>98wt% ID:2-5nm OD:<8nm Length:10-30 μ m SSA:>350m ² /g	1g 5g
A60017	多壁碳纳米管 Multi-walled carbon nanotubes	>98wt% ID:5-12nm OD:30-50nm Length:<10 μ m SSA:>100m ² /g	1g 5g
A60018	多壁碳纳米管 Multi-walled carbon nanotubes	>98wt% ID:5-15nm OD:>50nm Length:<10 μ m SSA:>60m ² /g	1g 5g
A60019	多壁碳纳米管 Multi-walled carbon nanotubes	>98wt% OD:4-6nm Length:0.5-2 μ m SSA:500-700m ² /g	1g 5g

多壁碳纳米管

货号	品名	纯度规格	包装
A60020	多壁碳纳米管 Multi-walled carbon nanotubes	>98wt% ID:5-10nm OD:20-30nm Length:0.5-2 μ m SSA:>120m ² /g	1g 5g
A60021	多壁碳纳米管 Multi-walled carbon nanotubes	>98wt% ID:5-12nm OD:30-50nm Length:0.5-2 μ m SSA:>100m ² /g	1g 5g
A60022	多壁碳纳米管 Multi-walled carbon nanotubes	>95wt% ID:3-5nm OD:8-15nm Length:~50 μ m SSA:>140m ² /g	1g 5g
A60023	多壁碳纳米管 Multi-walled carbon nanotubes	>98wt% ID:5-10nm OD:10-20nm Length:10-30 μ m SSA:>150m ² /g	1g 5g
A60024	多壁碳纳米管 Multi-walled carbon nanotubes	>98wt% ID:5-10nm OD:20-30nm Length:10-30 μ m SSA:>110m ² /g	1g 5g
A60025	多壁碳纳米管 Multi-walled carbon nanotubes	>98wt% ID:2-5nm OD:<8nm Length:0.5-2 μ m SSA:>350m ² /g	1g 5g 25g
A60026	多壁碳纳米管 Multi-walled carbon nanotubes	>95wt% ID:3-5nm OD:8-15nm Length:0.5-2 μ m SSA:>180m ² /g	1g 5g 25g
A60027	多壁碳纳米管 Multi-walled carbon nanotubes	>98wt% ID:5-10nm OD:10-20nm Length:0.5-2 μ m SSA:>200m ² /g	1g 5g 25g
A60028	多壁碳纳米管 Multi-walled carbon nanotubes	>98wt% ID:5-15nm OD:>50nm Length:0.5-2 μ m SSA:>70m ² /g	1g 5g 25g
A60029	羧基化多壁碳纳米管 Multi-walled carbon nanotubes -COOH functional	>98wt% OD:4-6nm Length:10-20 μ m SSA:500-700m ² /g	1g 5g
A60030	羧基化多壁碳纳米管 Multi-walled carbon nanotubes -COOH functional	>98wt% OD:4-6nm Length:0.5-2 μ m SSA:500-700m ² /g	1g 5g
A60031	羧基化多壁碳纳米管 Multi-walled carbon nanotubes -COOH functional	>98wt% -COOH:3.86wt% ID:2-5nm OD:<8nm Length:0.5-2 μ m SSA:>270m ² /g	1g 5g
A60032	羧基化多壁碳纳米管 Multi-walled carbon nanotubes -COOH functional	>95wt% -COOH:2.56wt% ID:3-5nm OD:8-15nm Length:0.5-2 μ m SSA:>160m ² /g	1g 5g
A60033	羧基化多壁碳纳米管 Multi-walled carbon nanotubes -COOH functional	>98wt% -COOH:2.00wt% ID:5-10nm OD:10-20nm Length:0.5-2 μ m SSA:>200m ² /g	1g 5g
A60034	羧基化多壁碳纳米管 Multi-walled carbon nanotubes -COOH functional	>98wt% -COOH:1.23wt% ID:5-10nm OD:20-30nm Length:0.5-2 μ m SSA:>170m ² /g	1g 5g
A60035	羧基化多壁碳纳米管 Multi-walled carbon nanotubes -COOH functional	>98wt% -COOH:0.73wt% ID:5-12nm OD:30-50nm Length:0.5-2 μ m SSA:>90m ² /g	1g 5g
A60036	羧基化多壁碳纳米管 Multi-walled carbon nanotubes -COOH functional	>98wt% -COOH:0.49wt% ID:5-15nm OD:>50nm Length:0.5-2 μ m SSA:>90m ² /g	1g 5g
A60037	羧基化多壁碳纳米管 Multi-walled carbon nanotubes -COOH functional	>98wt% -COOH:3.86wt% ID:2-5nm OD:<8nm Length:10-30 μ m SSA:>400m ² /g	1g 5g 25g
A60038	羧基化多壁碳纳米管 Multi-walled carbon nanotubes -COOH functional	>95wt% -COOH:2.56wt% ID:3-5nm OD:8-15nm Length:~50 μ m SSA:>130m ² /g	1g 5g 25g
A60039	羧基化多壁碳纳米管 Multi-walled carbon nanotubes -COOH functional	>98wt% -COOH:2.00wt% ID:5-10nm OD:10-20nm Length:10-30 μ m SSA:>200m ² /g	1g 5g 25g
A60040	羧基化多壁碳纳米管 Multi-walled carbon nanotubes -COOH functional	>98wt% -COOH:1.23wt% ID:5-10nm OD:20-30nm Length:10-30 μ m SSA:>110m ² /g	1g 5g 25g

多壁碳纳米管

货号	品名	纯度规格	包装
A60041	羧基化多壁碳纳米管 Multi-walled carbon nanotubes -COOH functional	>98wt% -COOH:0.73wt% ID:5-12nm OD:30-50nm Length:<10 μ m SSA:>100m ² /g	1g 5g 25g
A60042	羧基化多壁碳纳米管 Multi-walled carbon nanotubes -COOH functional	>98wt% -COOH:0.49wt% ID:5-15nm OD:>50nm Length:<10 μ m SSA:>60m ² /g	1g 5g 25g
A60043	氨基化多壁碳纳米管 Multi-walled carbon nanotubes -NH ₂ functional	>95wt% -NH ₂ :0.45wt% ID:3-5nm OD:8-15nm Length:~50 μ m SSA:>233m ² /g	1g 5g 25g
A60044	羟基化多壁碳纳米管 Multi-walled carbon nanotubes -OH functional	>98wt% OD:4-6nm Length:10-20 μ m SSA:500-700m ² /g	1g 5g
A60045	羟基化多壁碳纳米管 Multi-walled carbon nanotubes -OH functional	>98wt% -OH:1.76wt% ID:5-10nm OD:20-30nm Length:10-30 μ m SSA:>110m ² /g	1g 5g 25g
A60046	羟基化多壁碳纳米管 Multi-walled carbon nanotubes -OH functional	>98wt% -OH:1.06wt% ID:5-12nm OD:30-50nm Length:<10 μ m SSA:>100m ² /g	1g 5g 25g
A60047	羟基化多壁碳纳米管 Multi-walled carbon nanotubes -OH functional	>98wt% -OH:0.71wt% ID:5-15nm OD:>50nm Length:<10 μ m SSA:>60m ² /g	5g 25g
A60048	羟基化多壁碳纳米管 Multi-walled carbon nanotubes -OH functional	>98wt% OD:4-6nm Length:0.5-2 μ m SSA:500-700m ² /g	1g 5g
A60049	羟基化多壁碳纳米管 Multi-walled carbon nanotubes -OH functional	>98wt% -OH:5.58wt% ID:2-5nm OD:<8nm Length:0.5-2 μ m SSA:>380m ² /g	1g 5g
A60050	羟基化多壁碳纳米管 Multi-walled carbon nanotubes -OH functional	>95wt% -OH:3.70wt% ID:3-5nm OD:8-15nm Length:0.5-2 μ m SSA:>170m ² /g	1g 5g
A60051	羟基化多壁碳纳米管 Multi-walled carbon nanotubes -OH functional	>98wt% -OH:3.06wt% ID:5-10nm OD:10-20nm Length:0.5-2 μ m SSA:>200m ² /g	1g 5g
A60052	羟基化多壁碳纳米管 Multi-walled carbon nanotubes -OH functional	>98wt% -OH:1.76wt% ID:5-10nm OD:20-30nm Length:0.5-2 μ m SSA:>160m ² /g	1g 5g
A60053	羟基化多壁碳纳米管 Multi-walled carbon nanotubes -OH functional	>98wt% -OH:1.06wt% ID:5-12nm OD:30-50nm Length:0.5-2 μ m SSA:>110m ² /g	1g 5g
A60054	羟基化多壁碳纳米管 Multi-walled carbon nanotubes -OH functional	>98wt% -OH:0.71wt% ID:5-15nm OD:>50nm Length:0.5-2 μ m SSA:>90m ² /g	1g 5g
A60055	羟基化多壁碳纳米管 Multi-walled carbon nanotubes -OH functional	>98wt% -OH:5.58wt% ID:2-5nm OD:<8nm Length:10-30 μ m SSA:>400m ² /g	1g 5g 25g
A60056	羟基化多壁碳纳米管 Multi-walled carbon nanotubes -OH functional	>95wt% -OH:3.70wt% ID:3-5nm OD:8-15nm Length:~50 μ m SSA:>233m ² /g	1g 5g
A60057	羟基化多壁碳纳米管 Multi-walled carbon nanotubes -OH functional	>98wt% -OH:3.06wt% ID:5-10nm OD:10-20nm Length:10-30 μ m SSA:>170m ² /g	1g 5g 25g
A60058	镀镍多壁碳纳米管 Ni Coated multi-walled carbon nanotubes	CNTs:>38wt% Ni:>60wt% ID:3-5nm OD:8-15nm Length:~50 μ m	1g 5g 25g

多壁碳纳米管

货号	品名	纯度规格	包装
A60059	镀镍多壁碳纳米管 Ni Coated multi-walled carbon nanotubes	CNTs:>38wt% Ni:>60wt% ID:5-10nm OD:10-20nm Length:10-30 μ m	1g 5g
A60060	镀镍多壁碳纳米管 Ni Coated multi-walled carbon nanotubes	CNTs:>38wt% Ni:>60wt% ID:5-10nm OD:20-30nm Length:10-30 μ m	1g 5g 25g
A60061	镀镍多壁碳纳米管 Ni Coated multi-walled carbon nanotubes	CNTs:>38wt% Ni:>60wt% ID:5-12nm OD:30-50nm Length:<10 μ m	1g 5g 25g
A60062	镀镍多壁碳纳米管 Ni Coated multi-walled carbon nanotubes	CNTs:>38wt% Ni:>60wt% ID:5-15nm OD:>50nm Length:<10 μ m	1g 5g
A60063	大内径薄壁多壁碳纳米管 Large inner diameter thin-walled multi-walled carbon nanotubes	>70wt% ID:20-50nm OD:30-60nm Length:1-10 μ m SSA:>100m ² /g	1g 5g 25g
A60064	石墨化多壁碳纳米管 Graphitized multi-walled carbon nanotubes	>99.9wt% ID:3-5nm OD:8-15nm Length:10-50 μ m SSA:>90m ² /g	1g 5g
A60065	石墨化多壁碳纳米管 Graphitized multi-walled carbon nanotubes	>99.9wt% ID:5-10nm OD:10-20nm Length:5-30 μ m SSA:>80m ² /g	1g 5g
A60066	石墨化多壁碳纳米管 Graphitized multi-walled carbon nanotubes	>99.9wt% ID:5-10nm OD:20-30nm Length:5-30 μ m SSA:>90m ² /g	1g 5g
A60067	石墨化多壁碳纳米管 Graphitized multi-walled carbon nanotubes	>99.9wt% ID:5-12nm OD:30-50nm Length:<10 μ m SSA:>70m ² /g	1g 5g
A60068	石墨化多壁碳纳米管 Graphitized multi-walled carbon nanotubes	>99.9wt% ID:5-15nm OD:>50nm Length:<10 μ m SSA:>60m ² /g	1g 5g
A60069	石墨化羧基化多壁碳纳米管 Graphitized multi-walled carbon nanotubes - COOH functional	>99.9wt% -COOH:1.28wt% ID:3-5nm OD:8-15nm Length:10-50 μ m SSA:>117m ² /g	1g 5g
A60070	石墨化羧基化多壁碳纳米管 Graphitized multi-walled carbon nanotubes - COOH functional	>99.9wt% -COOH:1.00wt% ID:5-10nm OD:10-20nm Length:5-30 μ m SSA:>130m ² /g	1g 5g
A60071	石墨化羧基化多壁碳纳米管 Graphitized multi-walled carbon nanotubes - COOH functional	>99.9wt% -COOH:0.61wt% ID:5-10nm OD:20-30nm Length:5-30 μ m SSA:>90m ² /g	1g 5g
A60072	石墨化羧基化多壁碳纳米管 Graphitized multi-walled carbon nanotubes - COOH functional	>99.9wt% -COOH:0.36wt% ID:5-12nm OD:30-50nm Length:<10 μ m SSA:>80m ² /g	1g 5g
A60073	石墨化羧基化多壁碳纳米管 Graphitized multi-walled carbon nanotubes - COOH functional	>99.9wt% -COOH:0.25wt% ID:5-15nm OD:>50nm Length:<10 μ m SSA:>50m ² /g	1g 5g
A60074	石墨化羟基化多壁碳纳米管 Graphitized multi-walled carbon nanotubes -OH functional	>99.9wt% -OH:1.85wt% ID:3-5nm OD:8-15nm Length:10-50 μ m SSA:>117m ² /g	1g 5g
A60075	石墨化羟基化多壁碳纳米管 Graphitized multi-walled carbon nanotubes -OH functional	>99.9wt% -OH:1.53wt% ID:5-10nm OD:10-20nm Length:5-30 μ m SSA:>120m ² /g	1g 5g
A60076	石墨化羟基化多壁碳纳米管 Graphitized multi-walled carbon nanotubes -OH functional	>99.9wt% -OH:0.88wt% ID:5-10nm OD:20-30nm Length:5-30 μ m SSA:>90m ² /g	1g 5g
A60077	石墨化羟基化多壁碳纳米管 Graphitized multi-walled carbon nanotubes -OH functional	>99.9wt% -OH:0.53wt% ID:5-12nm OD:30-50nm Length:<10 μ m SSA:>80m ² /g	1g 5g
A60078	石墨化羟基化多壁碳纳米管 Graphitized multi-walled carbon nanotubes -OH functional	>99.9wt% -OH:0.36wt% ID:5-15nm OD:>50nm Length:<10 μ m SSA:>50m ² /g	1g 5g



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