

Solution-based self-assembly synthesis of two-dimensional-ordered mesoporous conducting polymer nanosheets with versatile properties

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Supplementary Table 1 | A summary of works related to the preparation of mesoporous nanosheet materials by a solution-based template directed co-assembly method

Ref.	Materials	Publication	Title	Application
1	2D mesoporous polydopamine-graphene heterostructures	Nature Commun.	Achieving stable Na metal cycling via polydopamine/multilayer graphene coating of a polypropylene separator	Sodium metal batteries
2	2D hierarchical ordered dual mesoporous polypyrrole/graphene nanosheets	Adv. Funct. Mater.	Hierarchical ordered dual-mesoporous polypyrrole/graphene nanosheets as bi-functional active materials for high-performance planar integrated system of micro-supercapacitor and gas sensor	Micro-supercapacitor/gas sensor
3	2D mPPy-GO heterostructure	Angew. Chem. Int. Ed.	A two-dimensional mesoporous polypyrrole graphene oxide heterostructure as a dual-functional ion redistributor for dendrite-free lithium metal anodes	Li metal batteries.
4	Cylindrical mPPy/rGO nanosheets	Angew. Chem. Int. Ed.	A general interfacial self-assembly engineering for patterning two-dimensional polymers with cylindrical mesopores on graphene	Micro-supercapacitor
5	mPDA/MXene heterostructure	Angew. Chem. Int. Ed.	Two-dimensional MXene-polymer heterostructure with ordered in-plane mesochannels for high-performance capacitive deionization	Capacitive deionization
6	MXene-mPPy layers	Adv. Energy Mater.	Charge-enriched strategy based on MXene based polypyrrole layers toward dendrite-free zinc metal anodes	Aqueous zinc ion batteries
7	mesoporous-titania-mesoporous-carbon vertical heterostructure	J. Am. Chem. Soc.	Two-dimensional mesoporous heterostructure delivering superior pseudocapacitive sodium storage via bottom-up monomicelle assembly	Pseudocapacitive sodium storage
8	Carbon nanotubes@mesoporous N-doped carbon	J. Mater. Chem. A	Synthesis of carbon nanotubes@mesoporous carbon core-shell structured electrocatalysts via a molecule-mediated interfacial co-assembly strategy	Oxygen reduction reaction
9	GO@CNB core-shell colloidosome hybrids	Adv. Mater.	Chemically assisted formation of monolayer colloidosomes on functional particles	Oxygen reduction reaction
10	Mesoporous ferric phytate nanomeshes	Small	General construction of 2D ordered mesoporous iron-based metal-organic nanomeshes	Li-ion batteries
11	EG/mPANi sheets	Small	High power in-plane micro-supercapacitors based on mesoporous polyaniline patterned graphene	Micro-supercapacitors
12	The mesoporous PTAPB nanosheets	Chem. Commun.	Constructing polymers towards ultrathin nanosheets with dual mesopores and intrinsic photoactivity	Fluorescent sensing
13	Mesoporous SnO ₂ nanosheets	Adv. Funct. Mater.	Controllably engineering mesoporous surface and dimensionality of SnO ₂ toward high-performance CO ₂ electroreduction	CO ₂ electroreduction
14	2D mesoporous π -CMPs-coated GO	Macromol. Rapid Commun.	controlled synthesis of mesoporous π -conjugated polymer nanoarchitectures as anodes for lithium-ion batteries	Li-ion batteries
15	2D mesoporous MnO ₂ nanosheets	Energy Stor. Mater.	2D mesoporous MnO ₂ nanosheets for high-energy asymmetric microsupercapacitors in water-in-salt gel electrolyte	Micro-supercapacitors
16	hierarchical porous N,O,S-enriched carbon foam	Adv. Energy Mater.	Pore and heteroatom engineered carbon foams for supercapacitors	Supercapacitors
17	2D N-doped mesoporous carbon	Small	Multi-dimensional molecular self-assembly strategy for the construction of two-dimensional mesoporous polydiaminopyridine and carbon materials	CO ₂ uptake

18	2D mesoporous polydopamine/reduced-graphene-oxide heterostructure	Chem. Eng. J.	Two-dimensional redox polydopamine with in-plane cylindrical mesochannels on graphene for high-energy and high-power lithium-ion capacitors	Lithium-ion capacitors
19	mPDA/rGO nanosheets	ACS Appl. Energy Mater	Two-dimensional interface engineering of mesoporous polydopamine on graphene for novel organic cathodes	Lithium-ion batteries
20	mesoporous nitrogen-doped carbon (rGO@N/C)	Chem. Mater.	Phosphorus- and nitrogen-doped carbon nanosheets constructed with monolayered mesoporous architectures	Oxygen reduction reaction
21	two-dimensional N-doped mesoporous carbon	CCS Chemistry	Multistage self-assembly strategy: designed synthesis of N-doped mesoporous carbon with high and controllable pyridine N content for ultrahigh surface-area-normalized capacitance	Supercapacitors
22	Nitrogen Doped Mesoporous Carbon Nanosheets	Nano Lett.	Sub-nanometric manganous oxide clusters in nitrogen doped mesoporous carbon nanosheets for high-performance lithium-sulfur batteries	Lithium-sulfur batteries

Supplementary References

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