



Constructing ultrastable ceramic@graphene core-shell architectures by an in situ synthesis strategy as advanced metal catalyst supports towards oxygen reduction

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Highlights

- A unique TiC@graphene core-shell structure material with low surface energy is designed and prepared as a stable support of Pt NPs.
- The presence of graphene nanosheets in a sphere shape effectively avoids their restacking or folding.
- The prepared Pt/GNS@TiC catalyst presents a remarkably improved ORR stability with high activity.
- The catalyst exhibits high power density of fuel cells under a low Pt loading and H₂/Air conditions.

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