

One-Step Synthesis of Carbon Nanosheet-Polyacrylamide Composite Materials via Liquid Plasma Treatment

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In this study, we employ liquid plasma method to prepare carbon nanosheet-polyacrylamide composites in one step. Plasma is the fourth state of matter and possesses high electron energy comparable with tens of thousands Kelvin at room temperature, containing a large number of active particles, which can be used for the synthesis and modification of carbon materials and polymers. The conventional gas-phase plasma method can only modify the surface of materials, resulting in low efficiency. This research aims to synthesize a large amount of carbon nanosheet-polyacrylamide composite materials in one step using the liquid plasma. Changing the solvent system could control the degree of carbonization and polymerization. Finally, we investigate the reaction mechanism of the liquid plasma-derived reactions.

References

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Figures

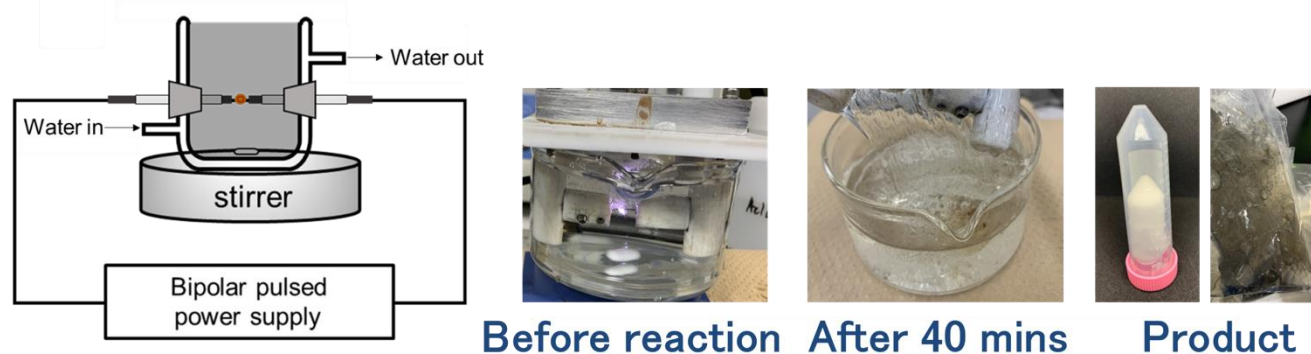


Figure 1: Effect of Liquid Plasma Polymerization Solvent on Products