

3D printing meets 2D materials for Energy Storage and Sensing

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Abstract

3D printing, a revolutionary additive manufacturing technique, has recently intersected with the burgeoning field of 2D materials, bringing about transformative possibilities for energy storage and sensing applications. By integrating the unparalleled precision and structural versatility of 3D printing with the exceptional electronic, mechanical, and electrochemical properties of 2D materials like graphene, molybdenum disulfide, and MXenes, researchers are engineering advanced energy storage devices, such as supercapacitors and batteries, with enhanced performance metrics. Additionally, this confluence is giving rise to a new generation of sensors, exhibiting heightened sensitivity and selectivity. As 3D printing continues to advance, its synergy with 2D materials promises to redefine the horizons of energy and sensing solutions. In this talk, we will describe different ways how the 3D printing integrates 2D materials, from filament preparation to atomic layer deposition postprocessing method. Outlook to the next big thing in 3D printing and 2D materials will be provided.

References

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