

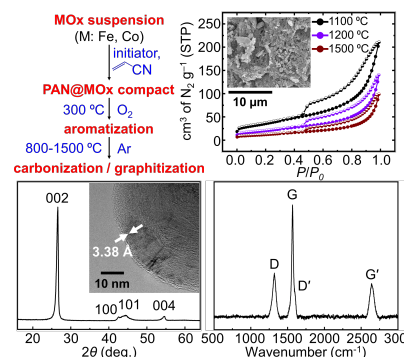
Aerogels as Diverse Nanomaterials: Synthesis & Applications

Research Topics

- Nanoporous metals, carbides, nitrides, borides
 - Carbothermal reduction of polymer-crosslinked aerogels
 - Nanoporous metal catalysts and thermites (Fe, Co)
- Polymeric, carbon and graphitic carbon aerogels
- Shape memory superelastic nanoporous polymers for deployable panels and biomimetic applications
- Synthesis of microporous carbons from phenolic, polybenzoxazine and polybenzodiazine aerogels as sorbent materials for CO₂ capture
- Hierarchical porous metamaterials for programmable acoustic wave propagation
- Aerogels as drug delivery systems: correlation between aerogel nanomorphology and drug uptake and release



"Metamaterial-like Aerogels for Broadband Vibration Mitigation"
C. Sotiriou-Leventis *et al.*
Cover image
Soft Matter **2021**, *17*, 4496-4503.



"Low-temperature Catalytic Synthesis of Graphite Aerogels from Polyacrylonitrile-crosslinked Iron Oxide and Cobalt Oxide Xerogel Powders"
Carbon **2022**, *193*, 107-127.

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Keywords

Organic materials synthesis; aerogels; nanomaterials; shape-memory polymers; thermites; microporous carbons; CO₂ sequestration; porous metamaterials

Significant Achievements

- >140 peer-reviewed articles, 4 book chapters
- 16 patents issued
- h-index: 42
- 13 Teaching awards from Missouri S&T