

Abstract Submitted
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Amorphous **Polymeric**
Nitrogen from Dynamic Shock Simulation¹ TODD BEAUDET, WILLIAM
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there has been significant interest in polymeric phases of nitrogen at low pressure
for potential application as an energetic material. This interest was bolstered by ex-
perimental evidence of metastable amorphous polymeric nitrogen at low pressure.^{2,3}
While considerable theoretical work has been done on many crystal phases of nitro-
gen, simulating amorphous polymeric nitrogen has been more challenging. Starting
from first principles dynamic shock simulation of cubic-gauche nitrogen⁴ we demon-
strate a form of polymeric nitrogen at low pressure that may be directly related to
amorphous polymeric nitrogen.

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²Goncharov, A. F. *et al.*, Phys. Rev. Lett. **85**, 1262 (2000)

³Eremets, M. I. *et al.*, Nature **411**, 170 (2001)

⁴Mattson, William D. and Balu, Radhakrishnan, Phys. Rev. B **83**, 174105 (2011)

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