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# Donor-Acceptor Type Helical Polyisocyanide Bearing Carbazole as the Pendant Groups for Nonvolatile Memory Effect

Xiangyu Tian, Yaming Cao, Bin Zhang\*, Shutong Huang and Yu Chen\*

Key Lab for Advanced Materials, School of Chemistry and Molecular Engineering, East China University of Science and Technology 130 Meilong Road, Shanghai 200237 (P.R.China)

\*Corresponding authors.

E-mail addresses: zhangbin@ecust.edu.cn (B. Zhang), chentangyu@yahoo.com (Y. Chen)

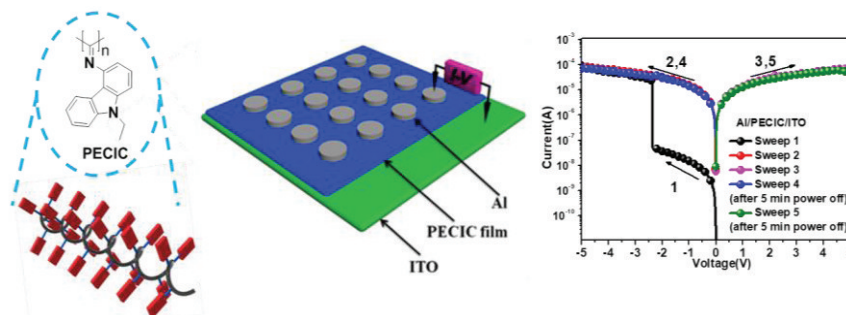
## Abstract

A highly soluble novel helical polyisocyanide bearing carbazole as the pendant groups (PECIC) has been synthesized via a nicked catalyzed polymerization reaction of 9-ethyl-3-isocyanocarbazole. The PECIC-based electronic device (Al/PECIC/ITO), in which holes dominate the conduct process, exhibits a typical nonvolatile WORM memory performance under an external electric field. By using in-situ C-AFM technique, its conductive nature was studied.

## Highlights

- D-A type helical polyisocyanide was synthesized for polymer memory.
- The fabricated device exhibits nonvolatile WORM memory performance.
- A higher ON/OFF current ratio was achieved after the annealing treatment.
- The conductive nature was reflected by C-AFM technique.

## Graphical abstract



**Key words:** Polyisocyanide; carbazole; helical structure; polymer memory; charge transfer;

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