

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202511095618 A

(19) INDIA

(22) Date of filing of Application :05/10/2025

(43) Publication Date : 05/12/2025

(54) Title of the invention : A DNA-BASED DATA STORAGE SYSTEM WITH IMPROVED LONGEVITY FEATURES

(51) International classification	:G06N0003123000, G06F0016220000, G11C0029500000, G06F0011100000, G06F0003060000	(71) Name of Applicant : 1)NOIDA INSTITUTE OF ENGINEERING & TECHNOLOGY Address of Applicant :19, Knowledge Park-II, Institutional Area, Greater Noida – 201306, Uttar Pradesh, India. Uttar Pradesh India
(31) Priority Document No	:NA	(72) Name of Inventor :
(32) Priority Date	:NA	1)Dr. MANSI MISHRA
(33) Name of priority country	:NA	2)Dr. RASHMI MISHRA
(86) International Application No	:	
Filing Date	:01/01/1900	
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number	:NA	
Filing Date	:NA	
(62) Divisional to Application Number	:NA	
Filing Date	:NA	

(57) Abstract :

The invention discloses a DNA-based data storage system with improved longevity features, comprising an encoding unit (101), DNA synthesis unit (102), encapsulation module (103), stabilized storage chamber (104), sequencing module (105), and decoding unit (106). Protective encapsulation and chemical stabilization safeguard DNA strands, while advanced error-correcting algorithms ensure accurate data retrieval. This multi-layered system extends archival lifespans beyond conventional digital media, offering a scalable, eco-friendly, and reliable platform for preserving cultural heritage, scientific records, and institutional archives with accuracy and efficiency.

No. of Pages : 14 No. of Claims : 6