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INTRODUCTION

In view of the recent amendment made in the Patents Act, 1970 by the Patents (Amendment) Act, 2005 effective from 01st January 2005, the Official Journal of The Patent Office is required to be published under the Statute. This Journal is being published on weekly basis on every Friday covering the various proceedings on Patents as required according to the provision of Section 145 of the Patents Act 1970. All the enquiries on this Official Journal and other information as required by the public should be addressed to the Controller General of Patents, Designs & Trade Marks. Suggestions and comments are requested from all quarters so that the content can be enriched.

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(54) Title of the invention : AI-AUGMENTED SYSTEMS AND METHODS FOR PRECISION GENE EDITING

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(57) Abstract :
ABSTRACT AI-AUGMENTED SYSTEMS AND METHODS FOR PRECISION GENE EDITING The present invention relates to systems and methods that integrate artificial intelligence (AI) algorithms with gene editing technologies to enhance the precision, efficiency, and reliability of genetic modifications. The system comprises an AI-powered analysis engine that identifies optimal editing sites, predicts editing outcomes, and recommends protocol optimizations, including guide RNA design and delivery methods. A feedback module enables real-time validation using molecular or imaging-based techniques, allowing iterative learning and protocol refinement. The invention is applicable to therapeutic, agricultural, and industrial contexts, providing scalable and adaptable solutions for high-accuracy gene editing. By leveraging predictive modeling, data-driven optimization, and real-time monitoring, the invention significantly reduces off-target effects and improves editing success rates.

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