



सत्यमेव जयते

ORIGINAL  
क्रम सं/ Serial No. : 179357



**पेटेंट कार्यालय, भारत सरकार** **The Patent Office, Government Of India**  
**डिजाइन के पंजीकरण का प्रमाण पत्र** **Certificate of Registration of Design**

डिजाइन सं. / Design No. : 420179-001

तारीख / Date : 15/06/2024

प्रारस्परिकता तारीख / Reciprocity Date\*

देश / Country

प्रमाणित किया जाता है कि संलग्न प्रति में वर्णित डिजाइन जो **ELECTROACTIVE POLYMER BIOSENSOR DEVICE FOR TARGETED DRUG DELIVERY** से संबंधित है, का पंजीकरण, श्रेणी 24-01 में 1.Dr. Girendra Kumar Gautam 2. Dr. Ashish Dixit 3.Dr. Gajendra Kumar 4.Dr. Shoma Devi 5.Dr. Vimal Kumar Bharti 6.Dr. Rahul Arya 7.Dr. Rishabh Bhardwaj 8.Dr. Hariom Sharma 9.Mr. Rajdeep Saharawat 10.Ms. Meenal Maan के नाम में उपर्युक्त संख्या और तारीख में कर लिया गया है।

Certified that the design of which a copy is annexed hereto has been registered as of the number and date given above in class 24-01 in respect of the application of such design to **ELECTROACTIVE POLYMER BIOSENSOR DEVICE FOR TARGETED DRUG DELIVERY** in the name of 1.Dr. Girendra Kumar Gautam 2. Dr. Ashish Dixit 3.Dr. Gajendra Kumar 4.Dr. Shoma Devi 5.Dr. Vimal Kumar Bharti 6.Dr. Rahul Arya 7.Dr. Rishabh Bhardwaj 8.Dr. Hariom Sharma 9.Mr. Rajdeep Saharawat 10.Ms. Meenal Maan.

डिजाइन अधिनियम, 2000 तथा डिजाइन नियम, 2001 के अधधीन प्रावधानों के अनुसरण में।

In pursuance of and subject to the provisions of the Designs Act, 2000 and the Designs Rules, 2001.



*[Signature]*  
कुन्नात जी पंडित

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जारी करने की तिथि : 30/08/2024  
Date of Issue

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## ELECTROACTIVE POLYMER BIOSENSOR DEVICE FOR TARGETED DRUG DELIVERY



Electroactive polymers have gained significant attention in biomedical applications due to their unique properties, such as flexibility, biocompatibility, and the ability to change shape or size in response to electrical stimulation. One of the emerging applications of these materials is in the development of biosensor devices for targeted drug delivery. These devices can revolutionize how drugs are administered, providing more precise, controlled, and efficient therapeutic outcomes.

### Advantages of Drug Delivery Systems Using Electroactive Polymers

- **Targeted Delivery:** These devices can be designed to release drugs only at specific sites within the body, reducing systemic side effects and improving drug efficacy.
- **Controlled Release:** The release rate of the drug can be precisely controlled by adjusting the electrical stimulus, allowing for on-demand therapy.

  
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- **Biocompatibility:** Many of these polymers are biocompatible, making them suitable for long-term implantation.

### **Applications**

Biosensors based on electroactive polymers are particularly useful in treating chronic diseases, such as cancer, diabetes, and cardiovascular conditions, where targeted and controlled drug delivery is crucial. For example:

- **Cancer Therapy:** These devices can deliver chemotherapeutic agents directly to tumors, minimizing damage to healthy tissues.
- **Diabetes Management:** They can deliver insulin in response to glucose levels, providing better glycemic control.