

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202541084365 A

(19) INDIA

(22) Date of filing of Application :04/09/2025

(43) Publication Date : 24/10/2025

(54) Title of the invention : Stent-Based System for Sustained Chemical Renal Denervation and Method of Operation

(51) International classification	:A61F0002820000, A61K0031337000, A61L0027580000, A61F0002900000, A61K0009000000	(71) Name of Applicant : 1)Priyanka Vemu Address of Applicant :Plot No: 113; H.No: 10-187; Gayatri Homes; Jillelaguda; Balapur Mandal; Rangareddy District. Telangana. Hyderabad Telangana India
(31) Priority Document No	:NA	2)Malarkodi Velraj
(32) Priority Date	:NA	(72) Name of Inventor :
(33) Name of priority country	:NA	1)Priyanka Vemu
(86) International Application No	:	2)Malarkodi Velraj
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 present disclosure proposes a stent-based system (100) for sustained chemical renal denervation to treat drug-resistant hypertension and sympathetic overactivity disorders. The system comprises a scaffold (102) made of Biodegradable polymeric stent or a self-expanding stent system of Nitinol or cobalt chromium deployable within a renal artery, configured as a self-expanding structure adapted to engage the arterial wall. At least one groove (104) is formed on the scaffold to retain a therapeutic composition. A biodegradable polymer matrix (106) is disposed in the groove (104), incorporating at least one neurotoxic or neuromodulatory agent selected from vincristine, vinblastine, cisplatin, oxaliplatin, paclitaxel, or combinations. The biodegradable polymer matrix (106) enables programmed drug release comprising an initial burst of less than 15% within 24 hr, followed by a sustained 2–6 week release, thereby achieving selective axonal degeneration. The biodegradable scaffold (102) bioabsorbs within 6–12 months, restoring vessel patency.

No. of Pages : 28 No. of Claims : 10