

심혈관 환자맞춤형 차세대 정밀의료기술 선도연구센터(RLRC) 2단계 1차년도 정기세미나

- 일정 : 2024년 08월 28일(수), 16:30~17:30
- 연사 : 경북대학교 정밀기계공학과 박종성 교수
- 주제 : Mxene coated stent–Self healing and drug delivery
- Abstract :

This study introduces a novel approach to mitigate the problem of restenosis associated with conventional stents by employing the stent itself as a localized heating mechanism. A three-dimensional printed biodegradable stent was coated with $Ti_3C_2T_x$ MXene through a repeated dip-coating process. It is well established that MXene particles exhibit significant absorption of electromagnetic waves and generate heat rapidly when subjected to low-power radio frequency fields. To assess the heating efficacy of the developed stent, it was exposed to Near-Infrared Radiation (NIR) at three distinct power levels, while simultaneously monitoring the surface temperature of the stent. The results indicated that the stent achieved the target temperature of 50° C in approximately 10 minutes when subjected to an NIR output of 3 W. This finding implies that the proposed method may effectively diminish the likelihood of vascular restenosis.

