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

❍ **일정** : 2024년 04월 26일(수), 16:30~17:30

❍ **연사** : 성균관대학교 반도체융합공학과 유재영 교수

❍ **주제** : Intelligent Medical Solution using Multimodal Electronics and Control Networks

❍ **Abstract** :

Despite recent strides in medical diagnostic systems, cardiovascular diseases (the leading global cause of death) and respiratory diseases (ranking 3rd and 6th) continue to claim 43 lives per minute worldwide. Conditions like acute cardiac arrest or respiratory failure often arise suddenly, lacking warning symptoms, posing challenges for immediate treatment and response. With an alarming 8% survival rate, these issues represent significant societal concerns. Furthermore, sudden infant death syndrome (SIDS) contributes significantly to infant mortality within the first five years, underscoring the pressing need for continuous monitoring of cardiovascular and respiratory functions, along with the development of rapid response systems.

While wireless biosignal detection systems offer a promising solution for continuous health monitoring, current emphasis primarily revolves around heartbeat detection. This leaves the technological landscape for detecting various biosignals, such as respiration and blood pressure, underdeveloped. Enhancing sensor sensitivity to subtle biosignals introduces susceptibility to external physical or electrical noise, complicating the task of obtaining reliable vital signals. Additionally, the development of medical solutions transitioning seamlessly from diagnosis to immediate therapeutic assistance demands a convergence of knowledge from medicine, electronic engineering, and control engineering, rendering it a futuristic technology.

The seminar introduces advances in three key areas that overcome the limitations of existing wireless monitoring systems: 1) the development of reliable high-performance biosignal sensors and biosignal separation algorithms, 2) the utilization of sensor networks for spatiotemporal information of biosignals, and 3) a real-time stimulation therapy system.