

Prof. Cynthia Furse (University of Utah) 講演会 開催のお知らせ

- 日時：2020年9月9日（水）9:00～12:00
- 場所：オンライン開催（Zoom を利用します。詳細はお申し込み時にご連絡いたします。）
- 参加費：参加費無料でどなたでもご参加いただけます。
- 参加申し込み URL：

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■プログラム：

【タイトル】 Implantable Antennas for Medical Applications: Technology, Practice, Ethics

【講師】 Prof. Cynthia Furse (University of Utah, USA)

【講演概要】

Implantable medical devices now touch virtually every major function in the human body. Cardiac pacemakers and defibrillators, neural recording and stimulation devices, cochlear and retinal implants, hormone and drug delivery systems, deep brain stimulation for treatment of Parkinson's disease and major depression are just a few of the many implantable medical devices available today, with more continually under development. Wireless telemetry for these devices is necessary to monitor battery level and device health, upload reprogramming for device function, and download data for patient monitoring. Wireless power transfer (WPT) is used for contact-less battery recharging. Challenges of communicating through lossy tissue are exacerbated by the shrinking size of next generation devices and the desire for more and more data and power exchange. This presentation will discuss the fundamental technologies that have enabled today's implantable antennas, and prospects for the future technology. And we will also discuss some of the societal and ethical considerations with medical implants.

【講師ご略歴】

Dr. Cynthia Furse is Professor in the Electrical and Computer Engineering Department at the University of Utah. Dr. Furse is a Fellow of the IEEE and the National Academy of Inventors. Her technological innovations and patents include development of a system to locate intermittent electrical faults on aging aircraft wiring, with which she founded a successful spin off company, LiveWire Innovation. She is also a pioneering researcher in the development of telemetry antennas for medical implants, and fast methods for predicting the statistical variation in bioelectromagnetic applications.

Dr. Furse teaches freshman circuit design, and has previously taught electromagnetics,

wireless communication, computational electromagnetics, microwave engineering, and antenna design. She is a leader in the flipped classroom teaching method. She has received numerous teaching and research awards including the 2009 IEEE Harriett B. Rigas Medal for Excellence in Teaching. She is a Fellow of the IEEE and the National Academy of Inventors. She was the Associate VP for Research at the University of Utah from 2009-2019.

■主催・共催：東北工業大学 IoT テクノロジー研究所主催
IEEE AP-S Tokyo Chapter / IEEE Sendai Section / IEEE Sendai WIE 共催

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