TECHNISCHE UNIVERSITÄT DRESDEN

Faculty of Electrical and Computer Engineering

Communications Laboratory, Chair for RF and Photonics Engineering

25. March 2022

Angebot für eine studentische Hilfskraft oder Studienarbeit

Human phantom investigation for wireless Body Area Network in 6G

SHK Task description:

This task involves the development and measurement of the experimental phantom reproducing the dielectric properties of human skin for the 60GHz body area network. An accurate skin phantom is of high significance to characterize the on-body antenna performance as well as the propagation channel. Realistic experimental phantoms emulating the dielectric properties of the human body surface are needed for the accurate analysis and optimization of on-body radiating structures. In addition, replacing the human body by a phantom is very convenient for measuring the antenna radiation characteristics. Utilisation of semi-solid phantoms also enables some feeding problems to be overcome, thereby facilitating measurement procedures.

In this work, a semi-solid/gel human skin phantom for body-centric antenna measurements is aimed, via a main composition recipe with several adjustments. The phantom will be manuafactured in the Galvanik Lab. The manufactured phantom will be validated by measurement of the dielectric properties using the permittivity measuring probe kit at millimeter wave in the antenna Lab.

Organizational unit

Lehrstuhl Hochfrequenztechnik | Institut für Nachrichtentechnik | Fakultät für Elektrotechnik und Informationstechnik, TU Dresden

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