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## Einladung zum Gastvortrag

Das Institut für Hochfrequenztechnik lädt herzlich zum Gastvortrag von Herrn **Prof. Cristiano Tomassoni** mit dem Titel:

### 3D PRINTING TECHNOLOGY FOR THE MANUFACTURING OF FILTERS AND OTHER COMPONENTS

Zeit: **Montag, 13. Februar 2023, 10:30 Uhr**

Ort: **Seminarraum HF01092, Inffeldgasse 12, 1. Stock**

**Abstract:**

The presentation focuses on the new possibilities offered by the Additive Manufacturing (AM) in the fabrication of passive devices, especially filters. The AM technology, also known as 3D-printing technology, offers several interesting and attractive features: fast prototyping, geometry flexibility, easily customizable products, low cost (in some cases) etc. Different AM technologies based on different methods that use different building materials have been developed. In this lecture, after an overview on the most common AM technologies, some examples of filters manufactured by the 3D-printers will be presented. In particular, it will be shown how the flexibility of AM can be used to manufacture new classes of filters with non-conventional geometries that cannot be (or can hardly be) manufactured by traditional manufacturing techniques. The importance of AM oriented design and postprocessing in order to obtain high performances is also illustrated.



**Cristiano Tomassoni** received the Ph.D. degree in electronics engineering from the University of Perugia, Perugia, Italy, in 1999. In 1999, he joined, as a Visiting Scientist, the Lehrstuhl für Hochfrequenztechnik, Technical University of Munich, Munich, Germany, where he was involved in the modeling of waveguide structures and devices by using the generalized scattering matrix technique. In 2001, he joined the Fakultät für Elektrotechnik und Informationstechnik, Otto-von-Guericke University, Magdeburg, Germany, as a Guest Professor. During his early career, he studied and contributed the enhancement of several analytical and numerical methods for the simulation of electromagnetic components: finite-element method, mode-matching technique, generalized multipole technique, method of moments, transmission-line matrix, and mode matching applied to the spherical waves. In 2001, he joined the University of Perugia, where he currently teaches the “Electromagnetic Field” course and the “Advanced Design of Microwave and RF Systems” course. His main research topics include the modeling and design of waveguide components and antennas. His research interests also include the development of miniaturized filters, reconfigurable filters, dielectric filters, substrate integrated waveguide filters, and 3-D printed filters. Prof. Tomassoni is the vice chairman of the MTT-5 Filters and Passive Components Technical Committee of the IEEE-MTT society. He also served as an Associate Editor for IEEE Transactions on Microwave Theory and Techniques from 2018 to 2022. Prof. Tomassoni is the recipient of the 2012 Microwave Prize presented by the IEEE Microwave Theory and Technique Society.