

# Substrate Integrated Waveguide – Base for Leaky Wave Antennas

## **Jan Machac**

Faculty of Electrical Engineering  
Czech Technical University in Prague  
Technicka 2  
16627 Prague 6  
Czech Republic  
machac@fel.cvut.cz

Antennas designed on the substrate integrated waveguide have a planar structure, and can be easily fabricated by a standard PCB technology, so they are suitable for cheap mass production. The lecture presents the results of an investigation of leaky wave antennas designed on a substrate integrated waveguide. The interest is given to three antenna types: an antenna radiating from a wide longitudinal slot etched in the top waveguide wall, a SIW CRLH leaky wave antenna, and a dual band SIW CRLH leaky wave antenna. These two later antennas radiate through meander slots etched in the top metallization which serve as series capacitors added to design the CRLH transmission line.