



Compact, High-Performance Mobile Device Antenna

Novel Ferrite Substrate for Antennas:

- Ferrite Substrate with permanent magnet film
 - Provides a magnetic field to the ferrite substrate
 - Reduces magnetic loss tangent of the substrate
 - Results in high antenna radiation efficiency and gain, and wide bandwidth

Tech ID: 13-0005

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Status:

Seeking research &
 development and/or
 licensing partner

Patent Pending

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 Information Technology

13 patents awarded

8 US Provisional Patents

Over 100 referred journal papers published

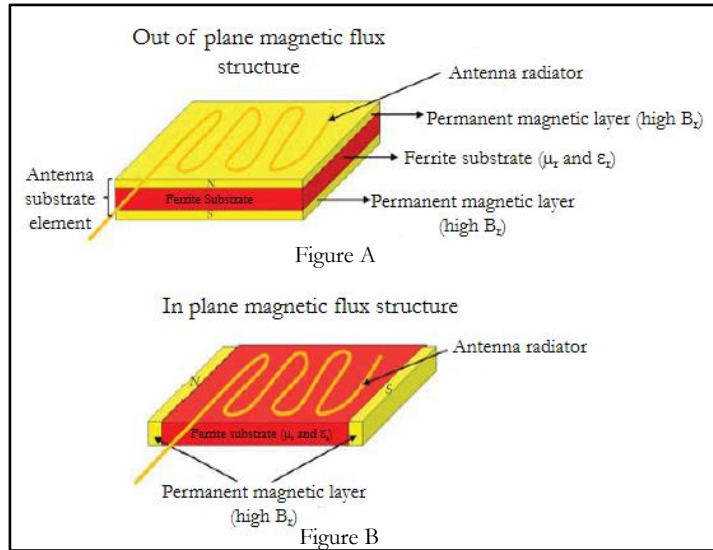


Fig. 1. Novel Ferrite Substrate for wireless communication antennas: (a) out of plane magnetization and (b) in-plane magnetization structure

Advantages:

- The permeability of ferrite increases the miniaturization factor and bandwidth of the antenna
- The magnetic field reduces the magnetic loss tangent of the ferrite substrate
- High antenna gain
- Can be used with other permanent magnets, electromagnets, solenoids, and other techniques

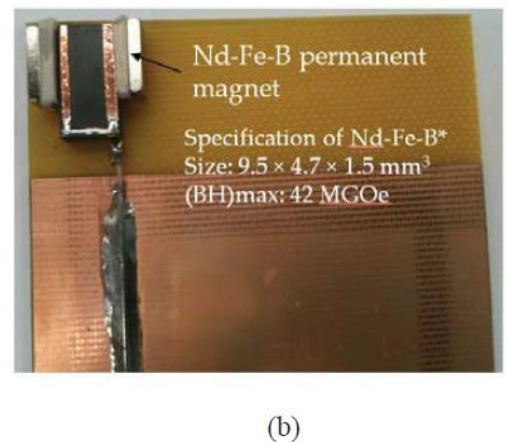
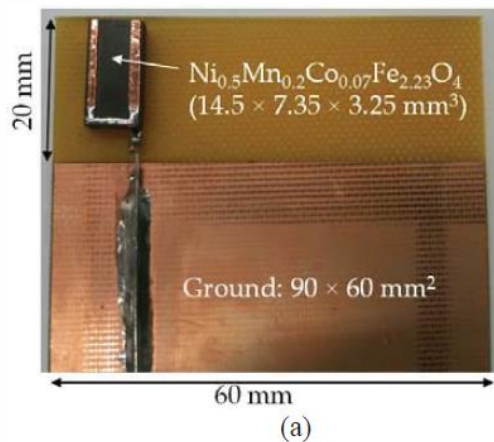


Fig. 2. Fabricated ferrite antennas: (a) without Nd-Fe-B permanent magnets (i.e. without applied magnetic field) and (b) with permanent magnets (i.e. with applied magnetic field).

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