Dielectric dimers for directional scattering

**Theory and Motivation:**
- high-permittivity ceramics particles of spherical geometry can be designed to steer the incident radiation towards an user-defined direction
- a combination of two such dielectric spheres, known as dimer, can be engineered to increase the directivity of the angular scattering pattern

**Application:**
- non-invasive bio-sensing
- boosting antenna directivity
- near-field focusing

**Tasks:**
- full-wave EM simulations of Alumina ceramic based dimers around 30 GHz
- for measurements, a bistatic setup needs to be developed with over-the-air calibration

**Information:**
- requires some knowledge of high-frequency circuit design and concepts
- thesis can be written in either German or English language
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