Aims & Scope: Significant interest has re-emerged recently in the study of surface waves and metasurfaces for electromagnetic (EM) wavefront manipulation leading to new modelling techniques and engineering approaches. Applications range from novel surface-wave antennas, holographic structures, and other leaky-wave antennas to frequency-selective surfaces (FSSs), electromagnetic bandgap (EBG) and other periodic structures, cloaking devices and radar cross-section (RCS) manipulation surfaces and/or bulk volumes as well as other metamaterial-based and metasurface architectures. The possibility to manipulate surface-bound and free-space EM waves for the guidance and control of anomalous reflection, refraction, and transmission has generated a plethora of new research areas. This has brought about many novel applications for modern real-life platforms, new communication systems and devices.

Although the history of EM wavefront engineering spans slightly more than a century, there is a crucial interest in exploring surface-bound and guided-mode EM waves to develop new technological and industrial solutions for different application fields, ranging from RF/microwave and THz frequencies to optical wavelengths. This special call is dedicated to all aspects of EM wavefront engineering, analytical modeling, analysis, and the synthesis of new and exotic surfaces for guided-wave and plane-wave control which have been realized by new planar lenses and volumetric-based holograms for example, as well as the general application of surface electromagnetic engineering and metasurface innovations.

Potential topics include but are not limited to the following:

- Intelligent Reflecting Surface (IRS) Design and Implementation
- Analytical Modeling of Electromagnetic Surfaces
- Modulated Metasurface Antennas and Programmable Metasurfaces
- Surface Waves in Microwave, Millimeter Wave, and Terahertz Regimes
- Gap Waveguides
- Leaky-Wave Antennas (LWAs)
- Fabry-Perot Cavity Antennas (LWAs) and other Cavity Structures
- Reflection and Transmission Surfaces
- Frequency Selective Surfaces (FSSs)
- Orbital Angular Momentum (OAM) Beam Generation
- Phase Shifting Surfaces (PSSs)
- Holographic Surfaces
- Holographic Beam Forming
- High Impedance Surfaces (HISs)
- Electromagnetic Band Gap (EBG) Surfaces
- Metamaterial-based Structures
- Techniques and Devices for Controlling Surface Waves and Guided Waves
- Applications of Metasurfaces from microwaves to the optical regime (Wireless Power Transfer, Radar, etc.)
- Surface Plasmon Polariton (SPP) Structures

Keywords:

1. Metasurface
2. Intelligent Reflecting Surface (IRS)
3. Electromagnetic Band Gap (EBG)
4. Gap Waveguides
5. Leaky-Wave Antennas
6. Periodic Structures
7. Surface Waves
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