A Designing of Electromagnetic Propeller
Xiaodong Liu*, Yu Liang, Qichang Liang
liuxiaod@gmail.com

Abstract
A device of electromagnetic propeller is designed in this work. It is composed of one magnetic ring and one magnetic cylinder. The magnetic ring is magnetized in the axial direction. The magnetic cylinder is magnetized in the radial direction. Their action-reaction Lorenz forces point to the same direction instead of opposite direction. This device can be used for satellite and space shuttle.

Method and Description
The schematic is shown in Figure 1. The magnetic ring cross the magnetic cylinder in the middle. The magnetic ring is magnetized in the axial direction. The magnetic cylinder is magnetized in the radial direction.

The magnetic lines of the magnetic cylinder is drawn in Figure 2. The red color represent the north pole of the magnets and the blue color represent the south pole of the magnets. In the scenario of Figure 2, the magnetic ring will be exerted Lorenz force pointing to left side.

In the meanwhile, the magnetic lines of the magnetic ring is drawn in Figure 3. In this scenario, the magnetic cylinder will be pushed to left side also.

On the other hand, the forces will not exert to each other unless their relevant position is variable.

In summary, the system composed of one magnetic ring and one magnetic cylinder presents different characteristics.
Figures:

Figure 1: Schematics of the device composed of one magnetic cylinder and one magnetic ring. The magnetic ring is magnetized in the axial direction. The magnetic cylinder is magnetized in the radial direction.
Figure 2: The magnetic lines of the magnetic cylinder are drawn. The magnetic ring will be exerted Lorenz force pointing to the left side.
Figure 3: The magnetic lines of the magnetic ring are drawn. The magnetic cylinder is pushed to left side.