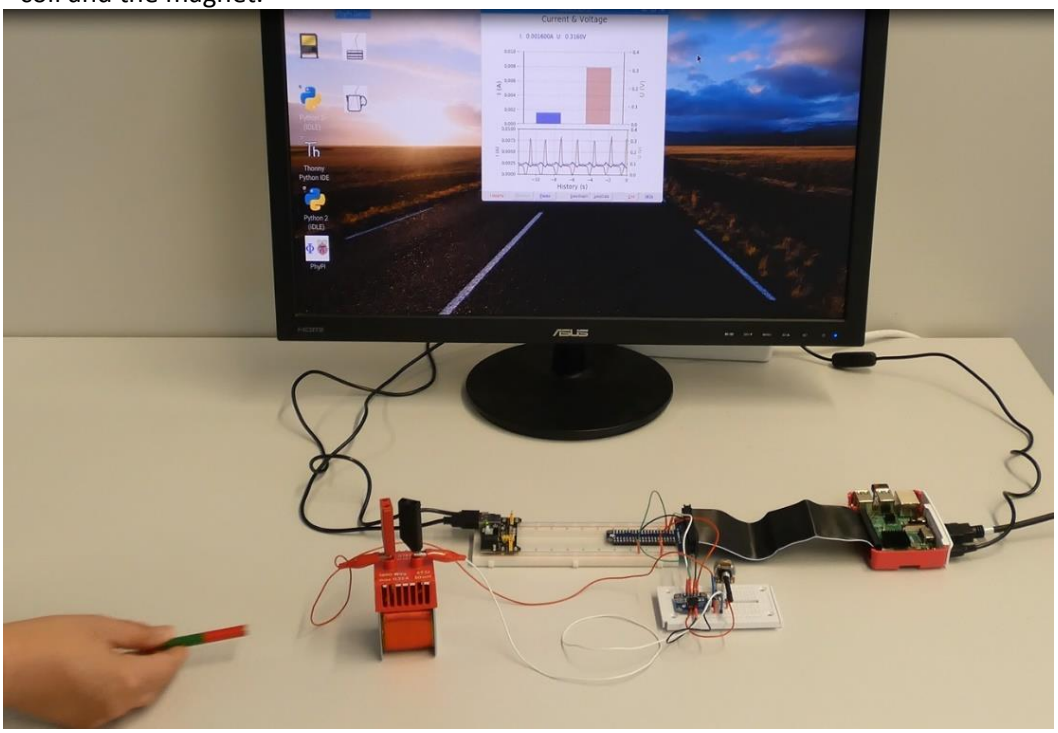
Electromagnetic Induction by a Moving Bar Magnet

PhyPiDAQ
Digital Measurement System Based on Raspberry Pi

Objectives:

- Measure the induced current and the induced emf in coils by connecting the INA219 current and voltage measuring sensor at the Raspberry Pi.
- Use various graphical capabilities of the PhyPiDAQ-Software to visualize the induced current and emf as moving a bar magnet in and out of the coil.
- Employ spreadsheets like LibreOffice or Excel to the recorded measurements to analyse the relationship between the induced current and the speed of the relative motion between the coil and the magnet.



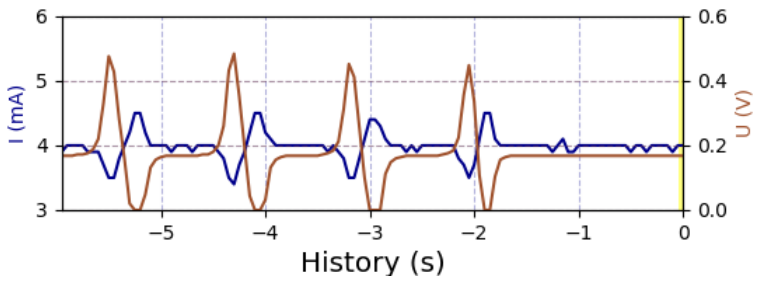
Faraday's Law of Electromagnetic Induction and Lenz's Law while moving a permanent magnet into and out of a coil of wire at different relative speed. The relationship between the induced current and the number of turns is also analysed.

Configurations:

-Configure the experiment and the INA219 current and voltage measuring sensor on the Graphical Interface of the PhyPiDAQ Software according to

`INA219_coil.daq`
`INA219Config.yaml`

Measurements



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