Contribution ID: **233** Type: **Poster Presentation**

Hardware optimization and open-source for learning and research

Thursday, 28 June 2018 15:00 (2 hours)

Open hardware and software are intensively used in academia, for research and teaching due to the affordable costs. Most famous open hardware devices like Arduino and RaspberryPi are fully accessorised with several shields able to perform general tasks. In this work we propose methods to optimise the existing Open-source platforms with non-existing shields which are easy to explain to entry level students in applied physics subjects. These devices are designed to avoid the use of Surface Mounting Device (SMD) in order to be built by the students and anybody with scarce technical skills .

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Session Classification: Poster Session 2

Track Classification: Track E - Physics Education