

# UGM Students Develop Smart Phone Charging Device Without Electricity

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Students of Universitas Gadjah Mada (UGM) developed photovoltaic technology innovation, *Chas Cha Sun*, as alternative to meeting energy demands for smartphones. The students are Yofrizal Alfi, Marwan Muansher, and Norwenda Tri Harnas from Engineering Physics study programme.

Yofrizal said the prototype of *Chas Cha Sun* started from their concerns over increasing energy use. National energy supply is getting more limited so it may cause a crisis.

“The massive use of electronic technology has aggravated energy problems, including from energy consumption when charging Smartphones,” he said on Thursday (17/11) at UGM.

This condition prompted them to find solutions by using Photovoltaic technology that enables users to do charging any time without generating emissions to the environment.

“Utilising Photovoltaic cells can transfer solar energy into electrical energy,” he said.



Yofrizal added the Photovoltaic cells were utilised due to the immense potential of solar energy in Indonesia that has not been optimally used. *Chas Cha Sun* has been designed into a small, simple and portable device.

Yofrizal said the *Chas Cha Sun* have Photovoltaic components that are of serial and parallel interconnections. Voltage setting is done by disconnecting the cable in the photovoltaic that has serial connection. Current setting is done by disconnecting the cable in the parallel photovoltaic.

The *Chas Cha Sun* is expected to resolve energy crisis problems. It is environmentally friendly as it uses solar energy that is transmitted into electrical energy through photovoltaic cells.

“Now we’re still developing *Chas Cha Sun* further. Hopefully, we can produce and use it massively to help sort out the problems of energy demands in society,” he said.

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