DIY Etching Machine

State of the Art (Papers) and Market Analysis

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Papers

A buck converter controller design in an electronic drive for LED lighting applications [Iturriaga-Medina et al., 2015]

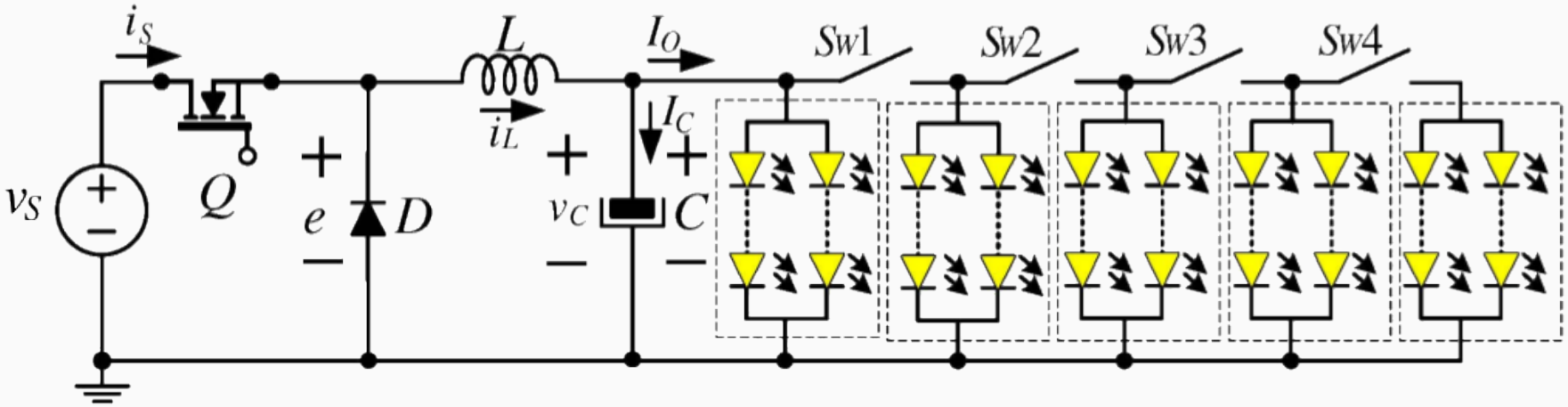

Figure 1: Bucket converters are very common in power electronics.

High-Efficiency Resonant LED Backlight Driver with Passive Current Balancing and Dimming [Xueshan Liu et al., 2017]

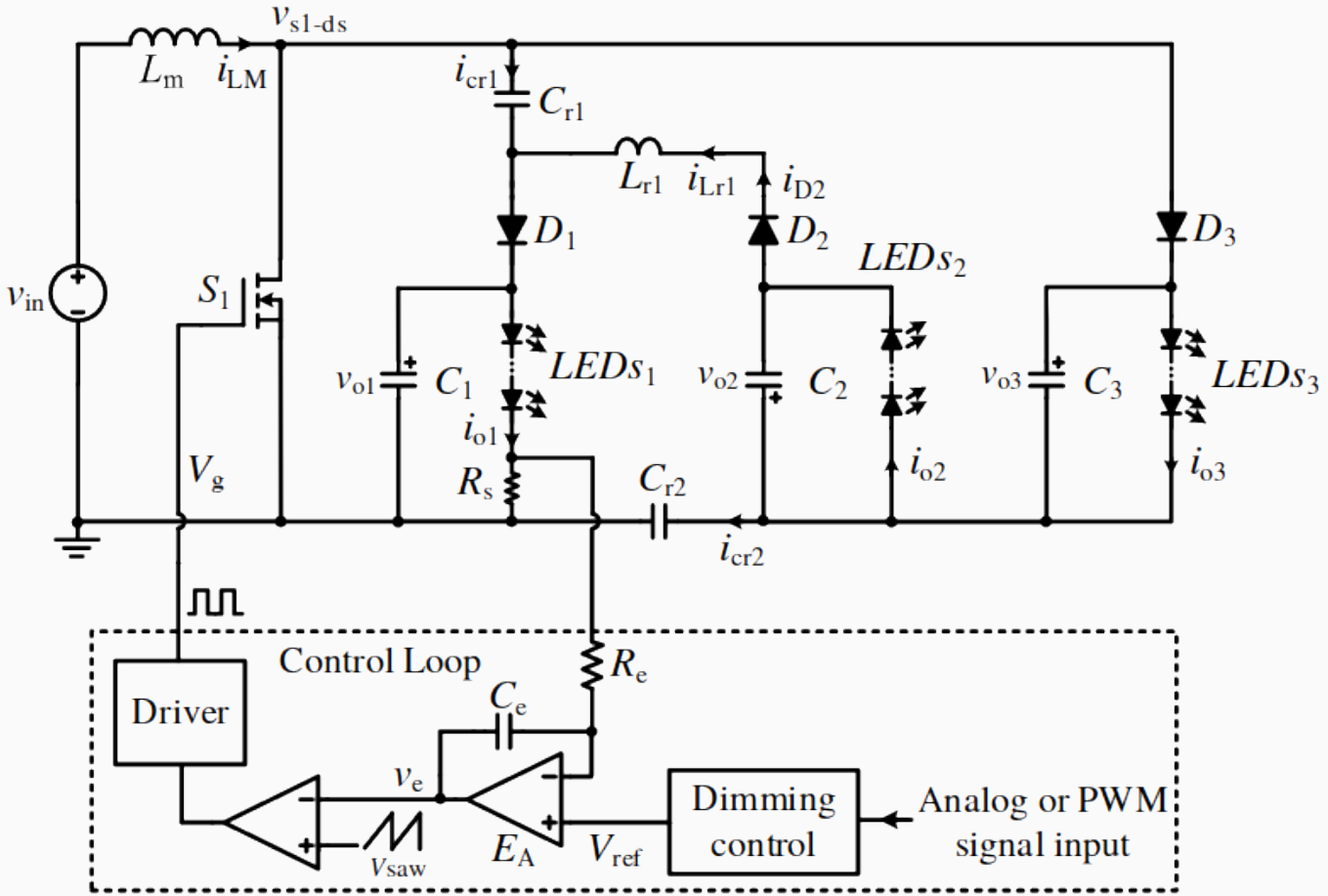

Figure 2: A bit more complex bucket converter.

Circuit I designed

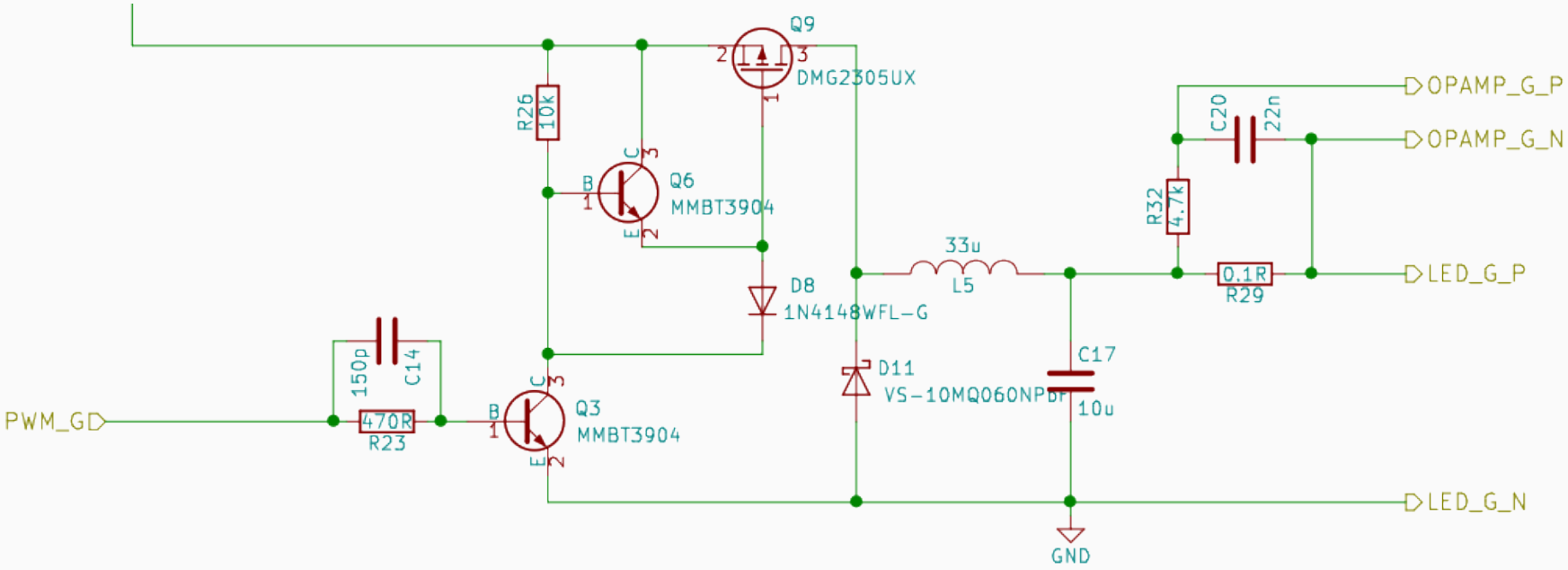

Figure 3: Quick gate charging bucket converter.

THE PRINCIPLE OF REVERSED LAG APPLIED TO ON-OFF TEMPERATURE CONTROL [H. SUTCLIFFE, 1960] (1)

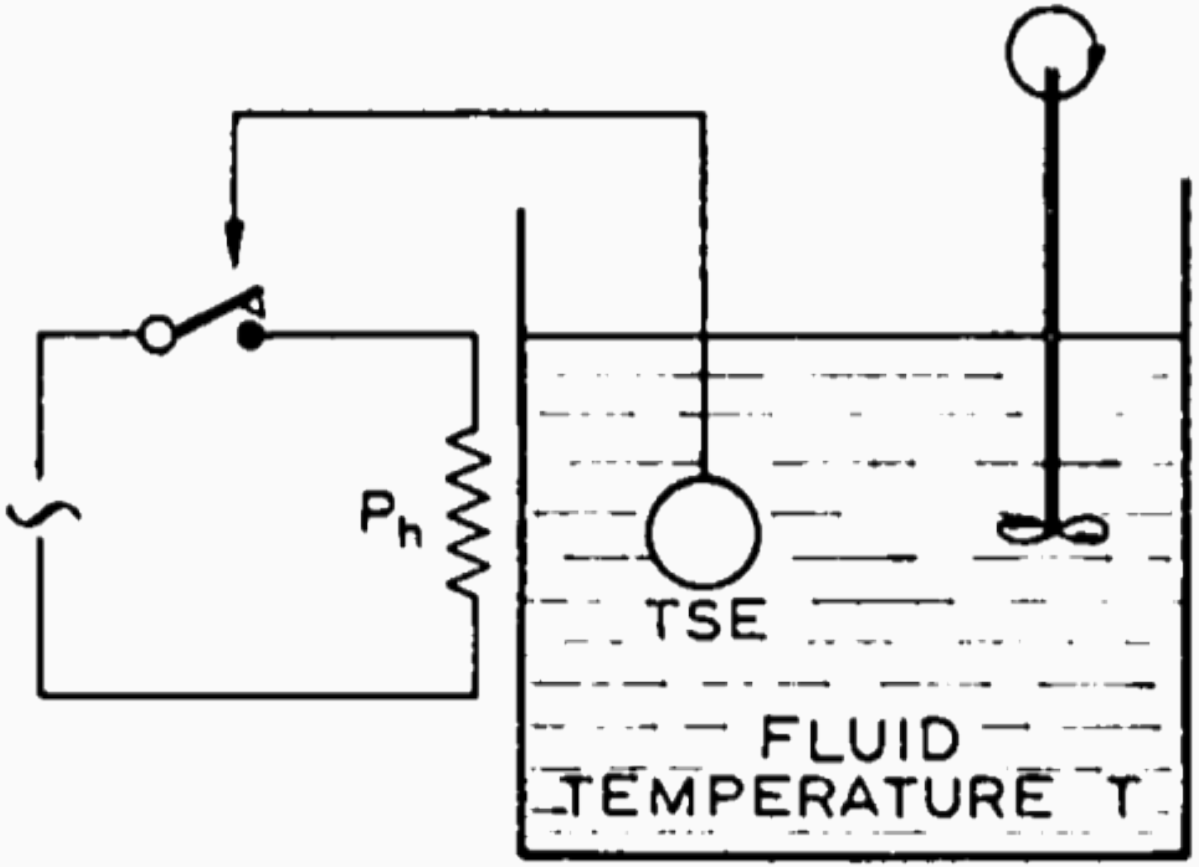

Figure 4: System overview of two-point control.

THE PRINCIPLE OF REVERSED LAG APPLIED TO ON-OFF TEMPERATURE CONTROL [H. SUTCLIFFE, 1960] (2)

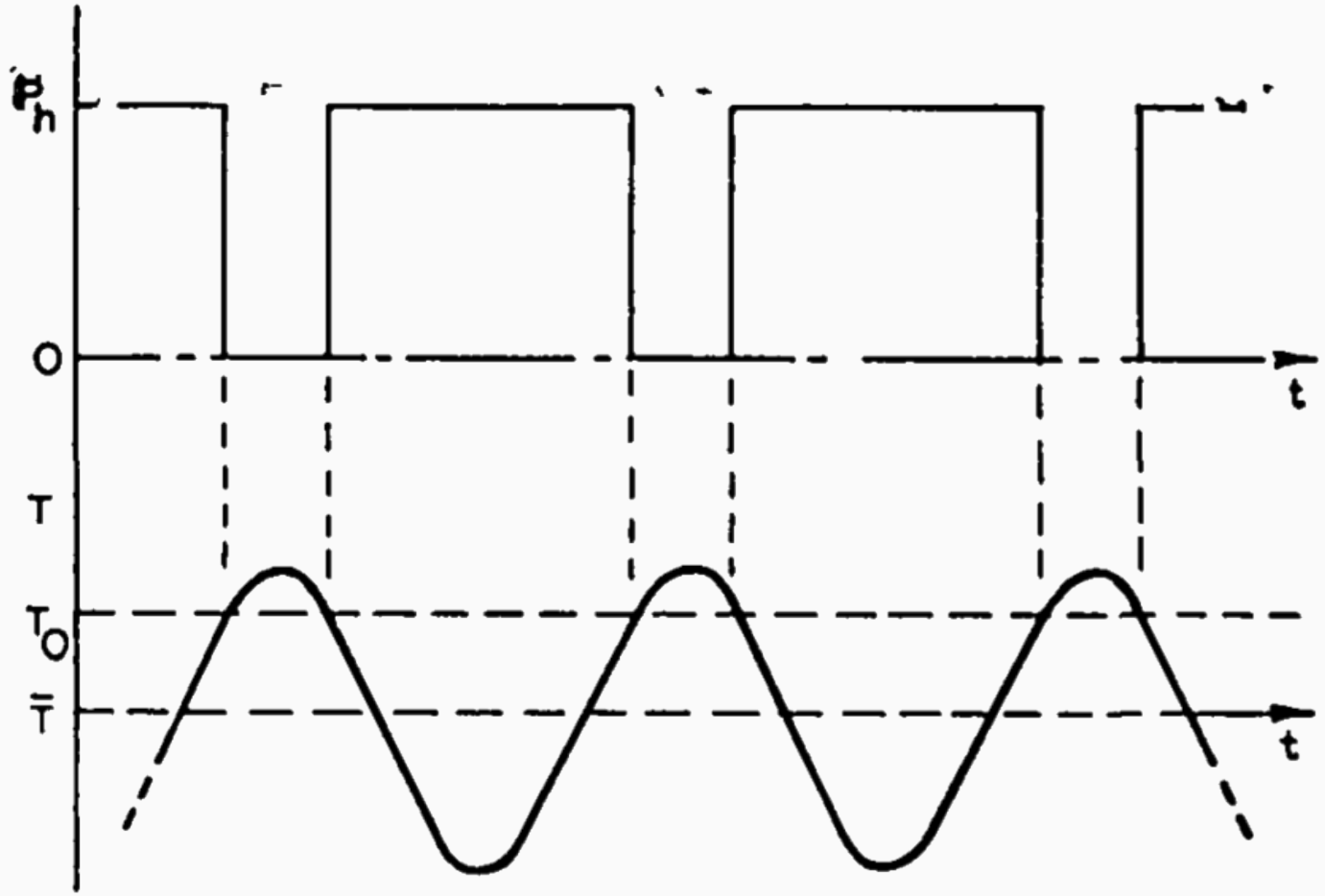

Figure 5: Low-pass behaviour of fluid being excited with a rectangular signal.

Market Analysis

Target Group

- Hackers

Target Group

- Hackers
- Researchers, that want a quick prototype

Target Group

- Hackers
- Researchers, that want a quick prototype
- Engineers, that have no time to wait for China

Target Group

- Hackers
- Researchers, that want a quick prototype
- Engineers, that have no time to wait for China
- People, that watch videos like this

www.reichelt.de

Example of a modern Etching Machine from Reichelt

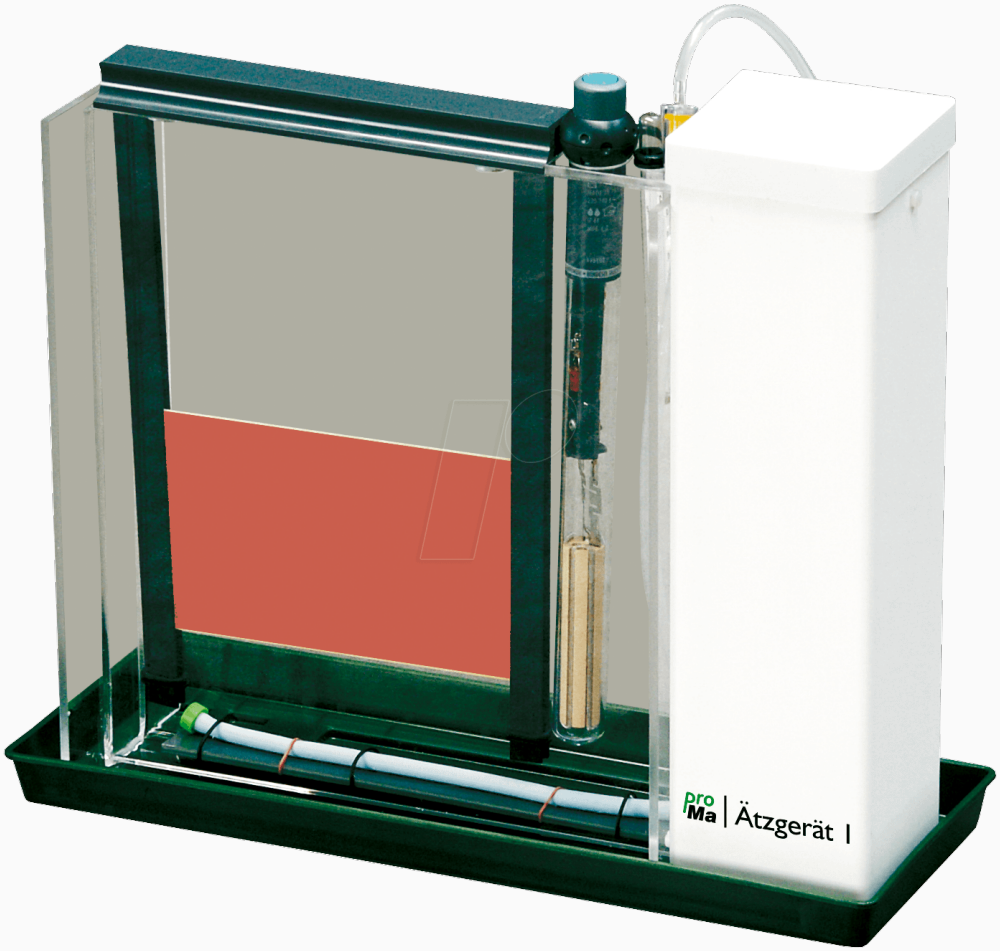

Figure 6: Price: 130 EUR. Needed Acid Volume: 1.75 l. Max. PCB Size: 235 mm x 170 mm. Heating Power: 100 W.

Example of a modern UV Light from Reichelt

Figure 7: Price: 220 EUR. Max. PCB Size: 160 mm x 250 mm. Technology: Fluorescent Tubes (4 x 8 W). Weight: 4 kg.

Our Goal

- Build this equipment at home

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- Try to be cheaper and better

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- Build this equipment at home
- Try to be cheaper and better
- Provide a tutorial on how to build this equipment yourself

Happy Coding :)