

Vapour Waves: Synths Powered by Discarded E-cigarettes

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1. PROGRAM NOTES

Over the past two years, an abundance of e-waste has grown on the streets of Belfast City. Keeping company with the plastic packaging and drinks containers one has grown to expect are so-called disposable vapes or e-cigarettes. This e-waste has a new identity; it exists outside landfill sites and WEEE collection points. This is e-waste as litter!

For the digital instrument makers and composer-designers who author this group, this situation illustrates the disconnect many of us hold between what we consume and its means of production. The composite nature of most products renders them and their associated supply chains highly complex. Furthermore, manufacturers must be more forthcoming in highlighting ethical issues in their supply chains.

This performance is a small act of resistance. The instruments used are powered by disposable vape batteries, highlighting the value of this rechargeable resource, which we're told to throw away. Doing so opens a space for conversations around the human rights issues at the bottom of the lithium battery supply chain [1] [2]. In the spirit of inclusive musicking, the group invites attendees from the companion NIME 2024 Vapour Wave workshop to perform alongside their bespoke creations as part of a locally-populated, crowdsourced group of performers.

The piece is composed with ample space for improvisation. Four short movements showcase the instrument's potential, focusing on harmonic drones, rhythmic interplay, timbral variation and the ability to create tension between control and chaos. The limitations of the technology are productive constraints to be explored.

Incorporating the NIME 2024 theme, these Vapour Wave instruments are inherently tactile; they invite touch and physical manipulation. Our 'hybrid world' manifests in the instrument's use of bought and found components.

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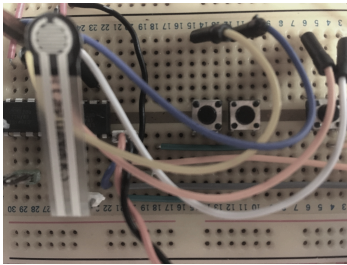


Figure 1 - Vapour Wave on Breadboard

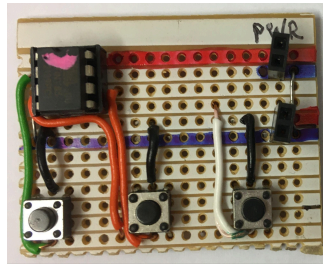


Figure 2 - Vapour Wave on Veroboard



Figure 3 – Interface in VHS Enclosure

2. PROJECT DESCRIPTION

At the core of the instruments we use in performance are ATtiny85 microprocessors. These chips make 8-bit tones, which we utilise to produce melodic and rhythmic patterns. The lo-fi sounds are a gateway to efficient thinking, programming, and performing strategies.

The instruments are modular: built on electronic breadboards, with each performance incorporating materials from the local environment. Ideally, the performance will occur in the evening, following a daytime workshop where participants build their instruments. The aim is that the newly built instruments will be used as part of the performance. This approach draws attention to the importance of work being completed by an audience and that the role of an audience is not passive but a complex collection of contributions that make live music performance an essential cultural practice.

The inclusion of workshop participants as performers illustrates the open nature of music as a creative practice shaped by collaboration in a relationship that combines the aesthetic and the social: the quest for beauty from noise, using play, listening, and trust.

3. PERFORMANCE NOTES

The performance is suited to a club environment. There will be a minimum of three performers. The instruments are monophonic, and all signals will be summed on-stage, resulting in a single stereo feed to be amplified. The instruments are played with all performers around a tabletop. On-stage monitors would be appreciated.

4. MEDIA LINK(s)

- Video: <https://youtu.be/DGdjzq3qgSs>

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[Rob Stave](#). The spirit of tinkering, which informs much of the choices of our approach, stems from the work of [Stanley Lunetta](#) and the [Logic Noise](#) series of online tutorials.

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- [1] Amnesty International. (2023) *DRC: Powering Change or Business as Usual*. Available at: <https://www.amnesty.org/en/documents/afr62/7009/2023/en/>
- [2] Amnesty International. (2023) *Democratic Republic of Congo: This is What We Die For*. Available at: <https://www.amnesty.org/en/documents/afr62/3183/2016/en/>