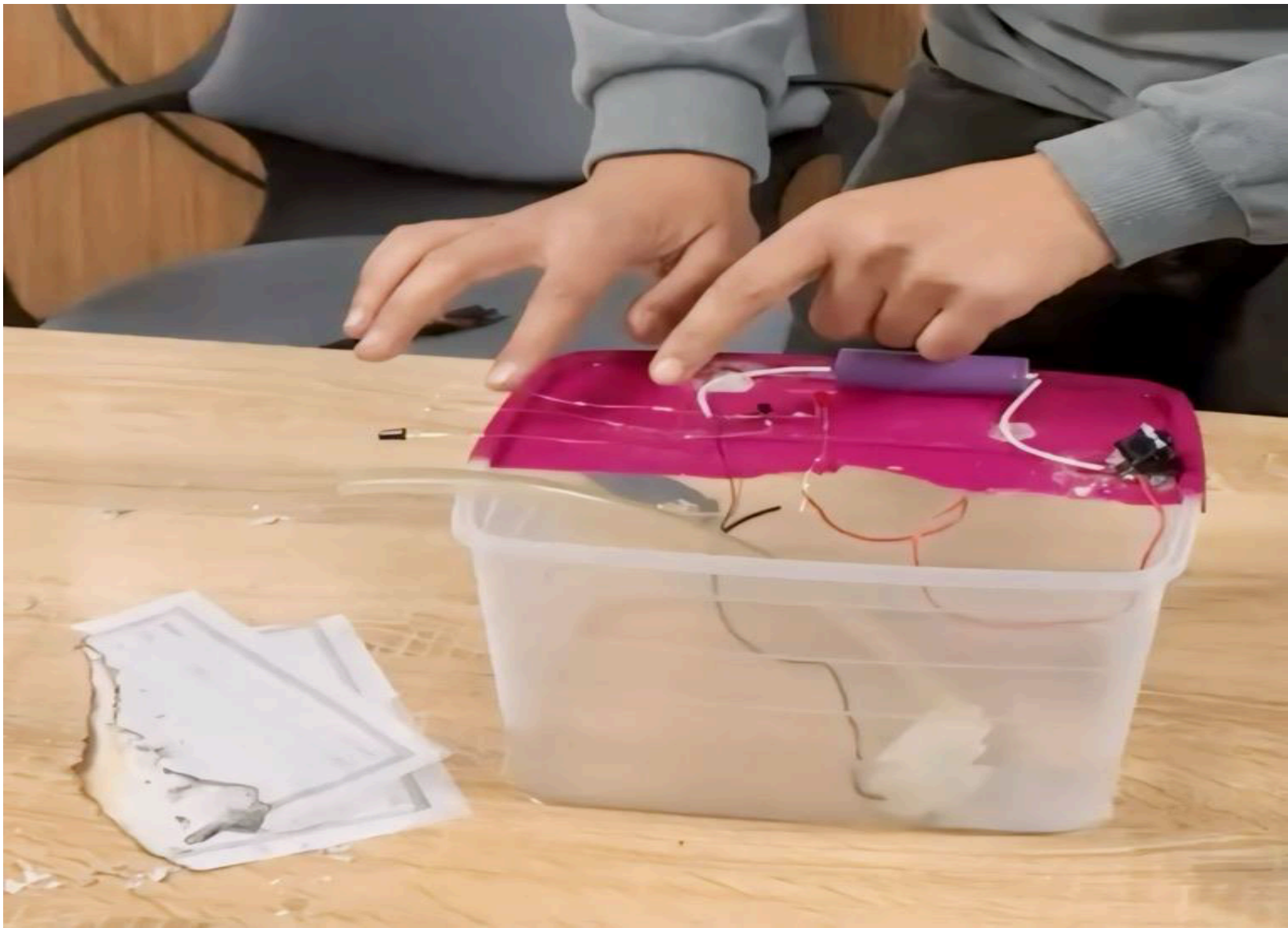


Automatic Fire Extinguisher Project Robotic and Mechatronic Engineering



This A the project is arranged by SUN's
Engineering faculty, of Mechatronic and Robotics Engineering
Department (DMRE)

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Abstract

Fire safety is a critical concern across a variety of environments, including residential, commercial, and industrial settings. Fires can cause significant damage to property, pose serious health and safety risks, and even result in loss of life. Traditional fire extinguishing systems typically require manual intervention, which may not be feasible or timely during an emergency. To address this, automatic fire extinguishing systems have been developed to provide a rapid and autonomous response to fire outbreaks.

Automatic fire extinguishers are designed to detect the presence of a fire and activate an extinguishing mechanism without human intervention. These systems utilize various sensors to identify fire indicators such as heat, smoke, or flame. Upon detection, the system triggers the release of an extinguishing agent—such as water, foam, or gas—to suppress the fire effectively. By automating the detection and response process, these systems aim to minimize fire damage and enhance safety.

پوخته

سهلامهتی ئاگر نیگهرا نییهکی گرنگه له سهرا نسهری ژینگه جیاوازهکاندا، لهوانهش شوینی نیشتهجیوون، بازرگانی و پیشهسازی. ئاگرکوژینهوه دهتوانیت زیانیکی بهرچاو به مولک و مالی بگهیهنیت و مهترسییهکی گهرهه تهندرستی و سهلامهتی دروست بکات و تهانهت له نهجامدا ژیا نی مروفیش لهدهست بدات. سیستهمی ئاگرکوژینهوه تهقلیدیهکان به شیوهیهکی گشتی پنیوستیان به دهستبهردانی دهستی ههیه، که لهوانهیه له کاتی باری نااساییدا نهتوانریت یان له کاتی خویدا نهبنیت. بۆ چارهسهرکردنی نهمه، سیستهمی ئاگرکوژینهوهی ئوتوماتیکی پهرهی پندراوه بۆ نهوهی وهلامیکی خیرا و سهربهخۆ بۆ سهرهلهلدانی ئاگرکه دابین بکات.

ئاگرکوژینهوه ئوتوماتیکیهکان به شیوهیهک دروستکراون که بوونی ئاگریک دهستنیشان بکهن و میکانیزمیکی کوژاندنهوه چالاک بکهن بهی دهستبهردانی مروف. نهه سیستهیمانه ههستههری جۆراوجۆر بهکاردههینن بۆ ناسینهوهی نیشاندهری ئاگر وهک گهرمی، دوکهل، یان بلنسه. لهگهل دۆزینهوهی، سیستهههکه دهبنته هوی دهردانی مادهی کوژینهوه- وهک ئاو، کهف، یان غاز- بۆ نهوهی ئاگرکه به شیوهیهکی کاریگر سهرکوت بکات. به ئوتوماتیکیکردنی پرۆسهی دۆزینهوه و وهلامدانهوه، نهه سیستهیمانه نامانجیان کهمکردنهوهی زیانهکانی ئاگر و بهرزکردنهوهی سهلامهتییه.

The Components

- 1-battery 3.7 V.
- 2-a switch to turn on and off the pump.
- 3-three resistors 220 ohm,1k ohm, 10k ohm
- 4-R.E led.
- 5-a sensor.
- 6-BC47 transistor.

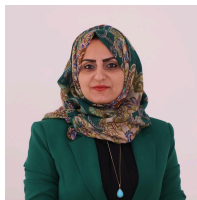
Objectives

The primary objective of developing an automatic fire extinguisher system is to create a reliable and efficient solution for fire suppression that operates without the need for manual activation.

Key objectives include:

- Timely Detection Ensuring the system can quickly detect the onset of a fire through accurate sensing mechanisms.
- Reliability and Safety : Designing a system that is reliable and safe to operate in various environments, with minimal maintenance requirements.

Supervisor



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About Soran University

[Soran University \(SUN\)](#) is located in the city of Soran, which is about a two-hour drive north-east of [Erbil](#) (Arbil, Hewlér), the capital of the [Kurdistan Region](#) of Iraq (KRIQ). The city is flanked by the famous Korek, Zozik, Henderén, and Biradost mountains. The medieval mountain village of [Rewandiz \(Rawanduz, رەواندێز\)](#) is a stone-cast away, and the two cities share this lovely, harmonious upland. While waiting for its green, environmentally friendly building to be erected on a hilltop overlooking the cities of Soran and Rewandiz, its existing city campus has been meticulously set out to accommodate the lovely natural landscape. The new campus will be the first of its type, being walkable, balanced, powered by renewable energy, and compliant with all international environmental regulations. There are 5 Faculties in [SUN](#); [Faculty of Arts](#) (FAAR), [Faculty of Science](#) (FSCN), [Faculty of Education](#) (FEDU), [Faculty of Law](#), Political Science, and Management (FLAW/PSM), and [Faculty of Engineering](#) (FENG). Also, there is SUN research centre. Moreover, at SUN, there is a Language Center. SUN signed many Memoranda of Understandings (MoU) with many International Universities,

How to get here

Soran University (SUN) is located in the heart of the city of Soran. The main city campus is easily found on Google Maps for direction.