Formulierung dehnbarer leitfähiger Tinten für 3D-Drucker vom Typ Direct Ink Writing (DIW)

Junior-Prof. Hongye Sun arbeitet mit Ihren Kollegen an einer Formulierung dehnbarer leitfähiger Tinten für 3D-Drucker vom Typ Direct Ink Writing (DIW)

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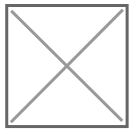
In the fablab we tried to help with measuring the resistance of this material with a RaspberryPi Pico.

2legged_robot_01.blend

Resistance Measurement For doing the “Multi-channel-measurement” of your Resistors we used the https://www.raspberrypi.com/documentation/microcontrollers/pico-series.html I just realized that the pico only has 3 analog inputs. It would be better to use the Arduino Mega, the Teensy4.1, the STM32 Blue Pill or a ESP32

https://chat-ai.academiccloud.de How can I measure a resistance between 1 and 10 Ohms with an Raspberry Pi Pico using a Voltage divider?

We use the software: https://www.arduino.cc/



With this sketch:

/* ReadAnalogVoltage

Reads an analog input on pin 0, converts it to voltage, and prints the result to the Serial Monitor. Graphical representation is available using Serial Plotter (Tools > Serial Plotter menu). Attach the center pin of a potentiometer to pin A0, and the outside pins to +5V and ground.

This example code is in the public domain.

https://www.arduino.cc/en/Tutorial/BuiltInExamples/ReadAnalogVoltage */

// the setup routine runs once when you press reset: void setup() { // initialize serial communication at 9600 bits per second: Serial.begin(9600); }

// the loop routine runs over and over again forever: void loop() { // read the input on analog pin 0: int sensorValue = analogRead(26); // Convert the analog reading (which goes from 0 - 1023) to a voltage (0 - 5V): float voltage = sensorValue * (5.0 / 1023.0); // print out the value you read: Serial.println(voltage); delay(100); }

And this electrical setup (we only had a 220ohm resistor):

```
3.3V
 |
[ R_ref ] = z. B. 100 Ω
 |
 +----+----------------+
      |                |
    [Rx]          ADC-Messpunkte
      |           (A+ und A– an GPIO26/27)
     GND
```



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How can I measure a resistance between 110 ohms and 1 kOhm with a arduino Nano using a Voltage divider?

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