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EXAMPLE PROJECTS

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ACTUATORS

CONNECTIONS

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CIRCUITS AND CODE

WIRELESS

CONDUCTIVE

MATERIALS

NON-CONDUCTIVE

MATERIALS

TOOLS

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THINKING OUT LOUD

SENSORS

3D PRINTED SENSORS

ADJUSTABLE SLIDER

ANALOG PIN STROKE SENSOR

ANTI-STATIC FOAM PRESSURE

MATRIX

BALLOON SENSOR

BEADED SWAY SENSOR

BONDED BEND SENSOR

BUTTON BUTTONS

BUTTON SWITCH

CAPACITIVE FABRIC

SLIDER/WHEELS

CIRCULAR KNIT INFLATION SENSOR

CIRCULAR KNIT STRETCH SENSORS

CONDUCTIVE POMPOM

CONSTRUCTED STRETCH SENSORS

CROCHET BUTTON

CROCHET CONDUCTIVE BEAD

CROCHET FINGER SENSOR

CROCHET PRESSURE SENSOR

CROCHET TILT POTENTIOMETER

CROCHET/KNIT PRESSURE

SENSORS

CROCHET/KNIT SQUEEZE SENSORS

DANISH KROWN SLIDE-SWITCH

DATAGLOVE FLEX SENSOR RIG

RESISTIVE SENSORS

WELCOME TO THE KOBAKANT DIY WEARABLE TECHNOLOGY DOCUMENTATION

This website aims to be a comprehensible, accessible and maintainable reference resource, as well as a basis for further exploration and contribution.

MOST RECENT POSTS

Sensors

BEADED SWAY SENSOR



swing, sway, wave, trail, quiver, quake, judder, jiggle, jig, joggle, jog, jerk, waggle, wiggle, wriggle, wobble, shake, shiver, shudder, squirm, slant, lean, tip, slope, incline, dip, angle, twitch, totter, teeter, tremble, rock, roll, flutter, flap, vibrate, oscillate, convulse ...work in progress... This beaded sway sensor was designed to capture the swinging, swaying, jerking, tilting movements [...]

Tools

E-TEXTILE SENSOR TESTER



Build a simple circuit with an LED, a coin-cell battery pouch and interrupt the full circuit connection by inserting two crocodile clips. When the clips connect, the circuit is complete and the LED light will shine. When you mount a textile sensor between the clips, the LED brightness will depend on the resistance of the []



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TOOLS

TECHNIQUES

CODE

CONDUCTIVE MATERIALS

ANTI-STATIC FOAM
CONDUCTIVE FABRIC SUBSTITUTE
CONDUCTIVE FABRICS
CONDUCTIVE GEL
CONDUCTIVE PAINTS AND INKS
CONDUCTIVE PEN
CONDUCTIVE PLAY-DOH
CONDUCTIVE TAPES
CONDUCTIVE THREADS
CONDUCTIVE VELCRO
CONDUCTIVE WOOL
CONDUCTIVE YARNS
CUSTOM PLUGS
FINE STEEL WOOL
GRAPHITE POWDER
HEADERS
METAL BEADS
METAL FASTENERS
METAL POPPERS
MULTI-CONDUCTOR FABRICS
PERFBOARD
RESISTIVE AND PIEZORESISTIVE FABRICS
RESISTIVE PAPER
RESISTIVE RUBBERS
STRETCH CONDUCTIVE FABRIC COMPARISON
THIN FLEXIBLE WIRE
VELOSTAT

Conductive Materials

CONDUCTIVE THREADS

also see: [conductive yarn](#)

conductive threads are usually manufactured for anti-static, electromagnetic shielding, intelligent textiles, wearable technology, data transfer and heating purposes. Most threads are metalized with an alloy of various metals, which can include silver, copper, tin and nickel. The core is normally cotton or polyester.

Conductive threads are uninsulated and sewing them tightly to metal usually makes for a good connection, though this connection tends to loosen over time where movement occurs. One way of avoiding this is to include a squishy material, such as stretch conductive fabric underneath the stitches, or a non-conductive material, so long as it does not obstruct the electrical connection.



see also: [Syuzi Pakhchyan's summary of conductive threads on Fashioning Technology](#)
>> <http://www.fashioningtech.com/page/conductive-thread>

About

Karl Grimm GmbH & Co. KG
Fabrik Leonischer Waren
Grimmstraße 75
91154 Roth - Eckersmühlen

Tel.: +49 (0) 9171 - 96 01 - 0
Fax: + 49 (0) 9171 - 96 01 - 25
Email: info@karl-grimm.com
Internet: www.karl-grimm.com

PRICE LIST

High-Flex

High-Flex No.:		3981	3981	3981	3981	3981	
Twisting		7 x 1	7 x 2	7 x 3	7 x 4	7 x 5	
Made of		E-Cu	E-Cu	E-Cu	E-Cu	E-Cu	

Length	about	4.300	2.100	1.400	1.050	850	meters/kilo
Diameter	about	0,42	0,62	0,75	0,80	0,9	mm
Resistance	about	2,3	1,2	0,75	0,55	0,45	Ohm/m
Breaking Strength	about	2,8	5,6	8,3	11,0	14,0	kilo
Copper Cross Section	about	0,013	0,027	0,041	0,054	0,068	mm ²
Copper tinned	€	82,--	97,--	86,--	82,--	76,--	per kilo
Copper silver plated	€	96,--	111,--	100,--	96,--	90,--	per kilo

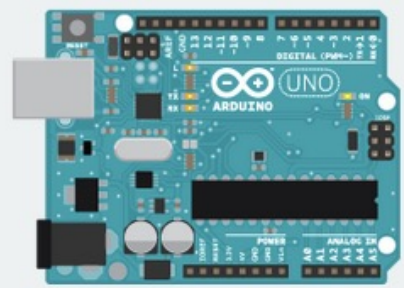
All prices are quoted with the addition of the copper-DEL-note + 5 % working costs following the day of the incoming order.

The price for the silver plated tinsel is basing on a price of EUR 250,00 for 1 kg Silver. In case of higher or lower price an addition or deduction based on the difference will be added.

Karl Grimm Postfach 3162 91146 Roth Germany	Quantity	Price per kilo EUROS	Total EUROS	XE.com exchange rate 1.306 on Feb. 3, 2012	TOTAL CDN
HIGH FLEX SILVER THREAD Copper Silver Plated					
7x1	1 kilo	96	96.00 €		
7x2	1 kilo	111	111.00 €		
7x3	1 kilo	100	100.00 €		
7x4	1 kilo	94	94.00 €		
7x5	1 kilo	90	90.00 €		
Thread Subtotal			491.00 €		
Surcharge for metals increase	30%		147.00 €		
Subtotal			638.00 €		
German Taxes	19%		121.28 €		
			759.28 €	x 1.306	\$991.62
				plus GST PST	xxx
				plus shipping	xxx



WHAT IS ARDUINO?



BUY AN ARDUINO

LEARN ARDUINO

DONATE



THE ARDUINO MKR FAMILY JUST GOT EVEN BIGGER!



BLOG

DRAGON BALL Z HEAD-MOUNTED SCOUTER COMPUTER REPLICA

```
void setup(){  
  }  
  
void loop(){  
  }  
}
```

> ARDUINO
> WEB EDITOR
> CODE ONLINE!

MKR WAN 1300
A POWERFUL BOARD
WITH LORA
CONNECTIVITY!
SHOP NOW



BLOG

Constructing an hourglass



Petoi Nybble

Project showcase by Rongzhong Li (李...)

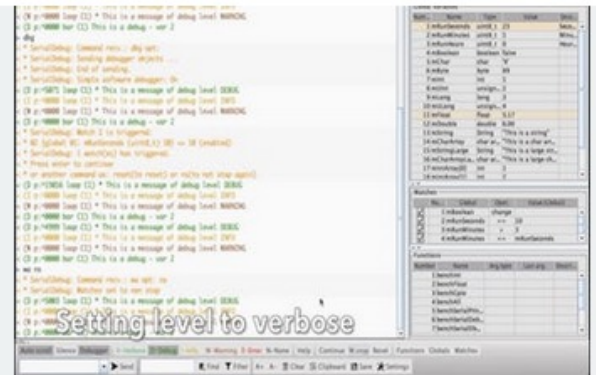
11,436 VIEWS 24 COMMENTS 192 RESPECTS



Automated Chess Board

Project showcase by maguerero

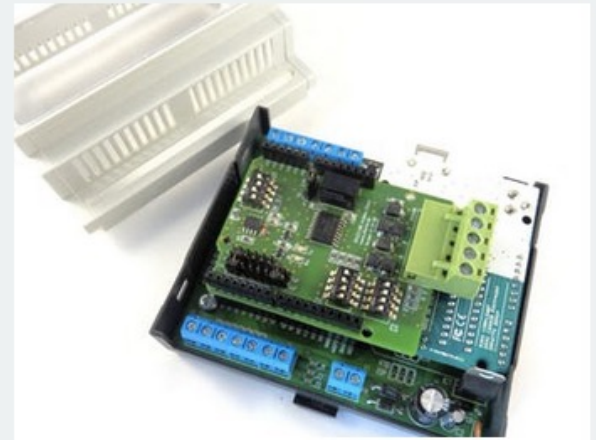
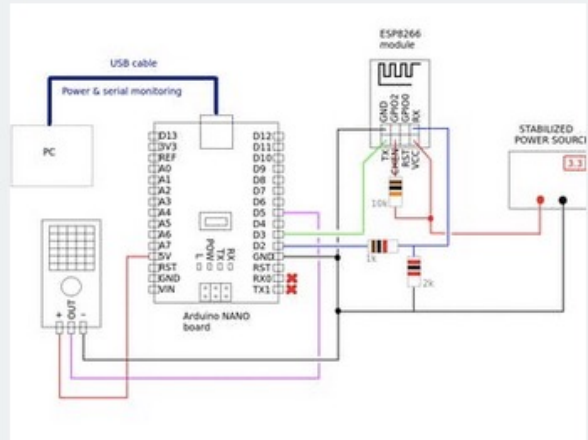
3,986 VIEWS 6 COMMENTS 55 RESPECTS



SerialDebug: Improving Debug to Arduino

Project tutorial by JoaoLopesF

1,278 VIEWS 6 COMMENTS 16 RESPECTS





SHOP

BLOG

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FORUMS


VIDEOS





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(SEE ALL)


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- CRICKIT - CREATIVE ROBOTICS (44)
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NEW PRODUCTS
(SEE ALL 65)

- 

Speaker - 40mm Diameter - 4 Ohm 3 Watt
\$4.95
- 


Adafruit NeoTrellis M4 with Enclosure and Buttons Kit Pack
\$59.95
- 


Silicone Elastomer 4x4 Button Keypad - 2 Pack
\$9.50
- 

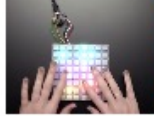
Adafruit NeoTrellis M4 Mainboard - featuring SAMD51
\$39.95
- 


NeoTrellis M4 Acrylic Enclosure Kit
\$12.50


FEATURED PRODUCTS
(SEE ALL 33)

- 

Adafruit NeoTrellis M4 with Enclosure and Buttons Kit Pack
\$59.95
- 

Mini Ad Blocking Pi-Hole Kit with Pi Zero WH - No Soldering!
\$39.95
- 

Adafruit NeoTrellis RGB Driver PCB for 4x4 Keypad
\$12.50
- 

Adafruit HalloWing M0 Express
\$34.95
- 

Adafruit Feather M4 Express - Featuring ATSAMD51
\$22.95



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- LEARN
- BLOG
- SUPPORT



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PRODUCT MENU

find products, tutorials, etc...

SPARK X EDUCATION A/C FORUM

HOME / PRODUCT CATEGORIES / BRANDS / LILYPAD (47 PRODUCTS)

SORT BY:

- Most Popular
- Highest Price
- Lowest Price
- Alphabetical
- Highest Reviewed
- Newest
- Oldest

REFINE BY:

- SparkFun Original
- On sale
- In stock

CUSTOMER REVIEWS:

- ★★★★★
- ★★★★
- ★★★
- ★★
- ★

PRICE:

\$0 - \$10

LilyPad

LILYPAD RESOURCE CENTER

In celebration of its release 10 years ago, we've **reduced prices** on the whole line.

LilyPad



LilyPad Sewable Electronics Kit

KIT-13927
\$99.95



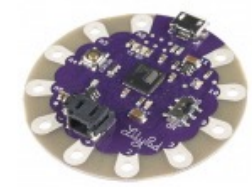
LilyPad Coin Cell Battery Holder - Switched - 20mm

DEV-13883



E-textile Basics Lab Pack

LAB-13165
\$199.95



LilyPad Arduino USB - ATmega32U4 Board

DEV-12049
\$25.95



Search Find Products, Brands, and more... (0) MY CART

Free shipping on orders over CAD \$75.00

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 - Microcontrollers**
 - Arduino

Microcontrollers

Microcontrollers are robot brains. Microcontrollers allow the designer to interface sensors and specialized control electronics together (along with anything else required for the project) and contain the overall logic of the robot.

Arduino Uno R3 USB Microcontroller

Perfect controller for roboticists, artists, designers and hobbyists

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Feedback



World's Largest Selection of Electronic Components Available for Immediate Shipment!™

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- Sensors, Transducers

Passives

- Capacitors
- Crystals, Oscillators
- Filters
- Inductors, Coils, Chokes
- Potentiometers, Variable Resistors
- Resistors
- Thermal Management

Electromechanical

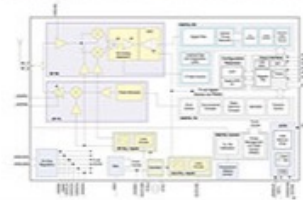
- Audio
- Fans
- Industrial Automation and Controls



REFERENCE DESIGNS

**EVAL-CN0350-PMDZ:
Piezoelectric Sensor Signal
Conditioning**

The circuit in this design is a 12-bit, 1 MSPS data acquisition system utilizing only two active devices. The system processes charge input signals from piezoelectric sensors using a single 3.3 V supply.



ARTICLE

**Rapidly Implement a Real Time
Location System Accurate to 10
cm**

Radiolocation systems have become a ubiquitous feature in nearly every type of mobile device and associated application.



BLOG

**New Product Discovery: Fluke
Electronics Test Meter T6-600**

Clamp ammeters measure current flow without the hassle of breaking apart a circuit to insert test leads for current readings.



Send Feedback



The Mirror Handbag
BUY NOW

SHOP COLLECTIONS

LEAH BUECHLEY

publications

talks



Leah Buechley is a designer, engineer, and educator. Her work explores integrations of electronics, computing, art, craft, and design. She has done foundational work in paper and fabric-based electronics. Her inventions include the LilyPad Arduino, a construction kit for sew-able electronics. She currently runs a design firm, Rural / Digital, that explores playful integrations of technology and design. Previously, she was an associate professor at the MIT Media Lab, where she founded and directed the High-Low Tech group. Her work has been featured in publications including The New York Times, Boston Globe, Popular Science, and Wired. Leah received a PhD in computer science from the University of Colorado at Boulder and a BA in physics from Skidmore College. At both institutions she also studied dance, theater, fine art, and design.

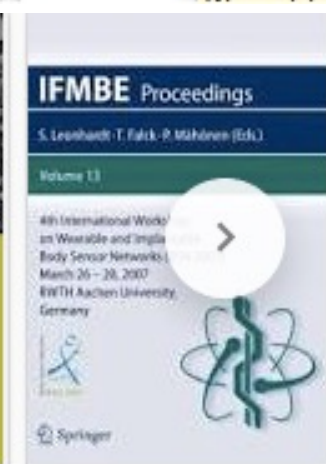
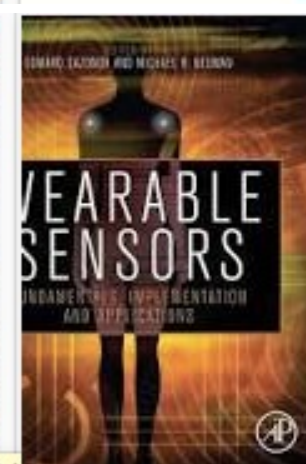
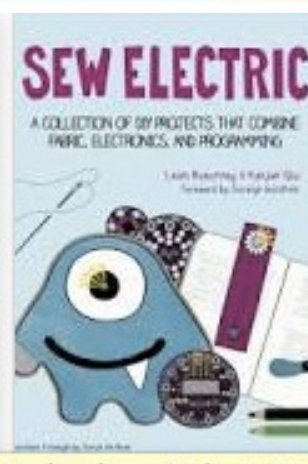
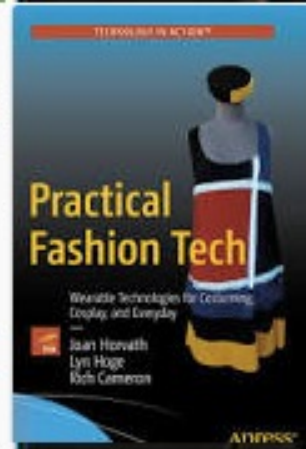
Leah was the recipient of the 2017 Edith Ackerman award for Interaction Design and Children.

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[Rural / Digital](#)

[High-Low Tech](#)



Getting Started in Electronics

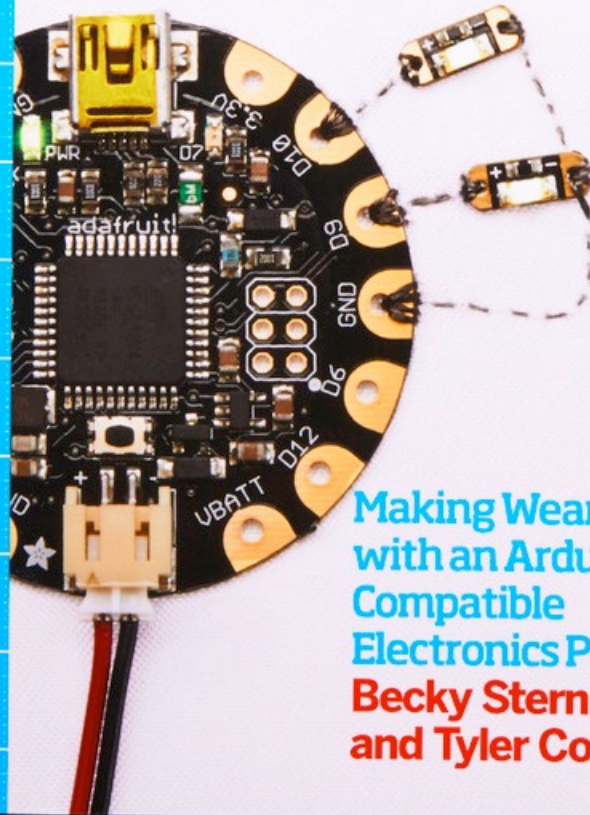
A complete electronics
course in 128 pages!



Forrest M. Mims III

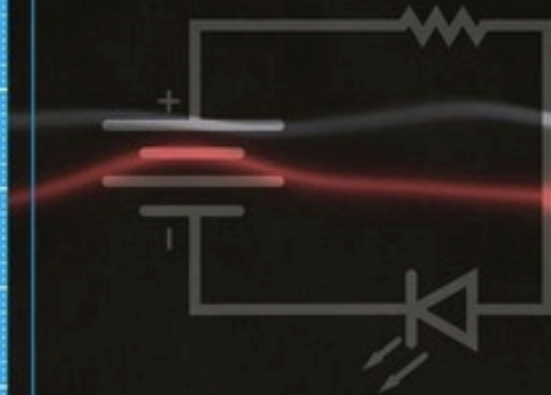
Make:

Getting Started with Adafruit FLORA



Making Wearables
with an Arduino-
Compatible
Electronics Platform
**Becky Stern
and Tyler Cooper**

Make:



Wearable Electronics

Design, prototype, and wear your
own interactive garments

Kate Hartman

Copyrighted Material



SMART TEXTILES

FOR DESIGNERS

INVENTING THE FUTURE OF FABRICS



designing
with
smart
textiles

Sarah Kettley

BLOOMSBURY

