

# Wall-Climbing Robots

## Electroadhesive Robots for Robust Vertical Mobility



SRI International is introducing wall-climbing robot prototypes for surveillance, inspection, and sensor placement applications. Ideal for remote surveillance or inspection of concrete pillars or other structures (e.g. bridges, tunnels, etc.), this robot uses SRI's patented electroadhesion technology to enable wall climbing. It can also be used to carry payloads such as cameras, wireless network nodes, and other sensors.

Electroadhesive robots enable:

- *Sensor placement above ground clutter*
- *High-resolution inspection of vertical surfaces*
- *Automated mapping of 3D structures*
- *Automatic detection of cracks*

### Robot Features

- *Remotely driven by operator-controlled wireless transmitter*
- *High-performance, rugged, steel-reinforced electroadhesive belt*
- *High strength carbon fiber tail*
- *Able to traverse concrete walls with bumps, ledges, pipes, and wire bundles*
- *Operates in dusty, outdoor environments*
- *Operates on most surfaces*

- *Innovative roller design that houses all electroadhesion electronics components*
- *High strength/weight ratio fiberglass honeycomb chassis*
- *High torque servo motor*
- *High energy-density lithium polymer batteries for robot drive and advanced lithium ion batteries for electroadhesion*

### PERFORMANCE SPECIFICATIONS

Dimensions	Outside: Approx. 50 cm x 70 cm Main body: Approx. 40 cm x 50 cm
Total Weight (excluding all payloads)	1.2 Kg
Payload Capacity	<ul style="list-style-type: none"> <li>• 200 g at a distance 10-15 cm from wall</li> <li>• Heavier payloads (up to 1 Kg) can be hung from the robot at a distance of less than 2 cm from wall</li> </ul>
Operational Surfaces	Concrete, metal, wood, glass, and drywall
Steering	5° (greater steering angles available)
Battery Life	<ul style="list-style-type: none"> <li>• 200 m travel distance without recharging</li> <li>• 5 hours perching time without recharging</li> </ul>
Remote Control Range	100 m
Operational Conditions	10° – 40°C Robot can navigate in limited wind conditions (< 5 m/s)
Obstacle Clearance	Obstructions of height 1 cm or less perpendicular to direction of robot motion

**Watch SRI's wall-climbing robot in action on our YouTube channel: [youtube.com/innovationsri](https://youtube.com/innovationsri)**



The technology and design of this robot may be adapted to fit the needs of your specific application. Contact SRI to discuss its potential for your project.

### Contact Us

Philip von Guggenberg  
Director  
Business Development  
pvong@sri.com  
phone: 650.859.5865

### About SRI International

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*Headquarters: Silicon Valley*

#### **SRI International**

333 Ravenswood Avenue  
Menlo Park, California 94025-3493  
650.859.2000

*Washington, D.C.*

#### **SRI International**

1100 Wilson Blvd., Suite 2800  
Arlington, Virginia 22209-3915  
703.524.2053

*Princeton, New Jersey*

#### **SRI Sarnoff**

201 Washington Road  
Princeton, New Jersey 08540-6449  
609.734.2000

*Additional U.S. and international locations*

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