

[Request Information](#)

[Permalink](#)

## Microfabricated Surfaces For The Physical Capture Of Bed Bugs And Other Insects

Tech ID: 23533 / UC Case 2012-501-0

### BACKGROUND

Bed bugs have made a dramatic comeback in recent years, infesting everything from homes and hotels to schools, movie theaters and hospitals. Current forms of treatment (e.g. heat, cold, vacuuming, and pesticides) tend to be costly, tedious, and unreliable. Hiring a professional can be expensive, and unfortunately many bed bug sufferers resort to ineffective, potentially dangerous measures.

### TECHNOLOGY DESCRIPTION

Researchers at the University of California and the University of Kentucky have developed a concept for the physical capture of bed bugs using microfabricated surfaces. These pesticide-free microfabricated surfaces mimic plant leaf structures that can capture bed bugs, and their functional aspects include the shape, spacing, and orientation of the microstructures. It was shown that the geometry and the mechanical properties of the microstructures influence the effective capture of bed bugs. Polymers are used in microfabrication that do not generate aversion or avoidance by the bed bugs. Results from this research were recently published (M. W. Szyndler et al., J. R. Soc. Interface 2013; 10 (83):20130174), and received high profile press coverage from the N.Y. Times, BBC News, Business Week, Scientific American and others.

### APPLICATION

Microfabricated surfaces which entrap insects afford new opportunities for pest control, especially in the critical, early stages of infestation. Incorporating these new materials into carpets, rugs, and other surfaces within dwellings will potentially revolutionize the prevention, detection and control of bed bugs using sustainable, environment-friendly technology.

### ADVANTAGES

### PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	RE48,657	07/27/2021	2012-501
United States Of America	Issued Patent	9,930,877	04/03/2018	2012-501
United States Of America	Issued Patent	9,468,203	10/18/2016	2012-501

### CONTACT

Richard Y. Tun  
tunr@uci.edu  
tel: 949-824-3586.



### OTHER INFORMATION

### KEYWORDS

Bed Bugs, Physical Capture, Microfabricated Surfaces, Pesticide-Free, Pest Control

### CATEGORIZED AS

- » **Biotechnology**
- » Other
- » **Materials & Chemicals**
- » Polymers
- » Textiles

### RELATED CASES

2012-501-0

**UCI** Beall  
Applied Innovation

5270 California Avenue / Irvine, CA  
92697-7700 / Tel: 949.824.2683



© 2013 - 2021, The Regents of the University of  
California  
[Terms of use](#)  
[Privacy Notice](#)