

Fabrication Approach to Impart Anti-Wetting Properties (#7826)

A fabrication approach to impart anti-wetting properties to various surfaces by changing the surface physical structures, chemical structures, or both.

Georgia Tech inventors have developed a novel fabrication approach to impart anti-wetting properties to various surfaces by changing the surface physical structures, chemical structures, or both. The general approach takes advantage of and accentuates the intrinsic hierarchical structure of specific materials. As a result, the process is capable of maintaining the mechanical integrity of the material after modification. Currently, this process has been applied to paper, wood, fabrics, and stainless steel surfaces. More specifically, when an electrochemical process is used to alter stainless steel surfaces, it has demonstrated the ability to kill bacteria without the use of antibiotics or chemical additives.

Benefits/Advantages

- Does not employ particles to control wetting
- Approach can be used to modify any material surface
- Cost-effective
- Wide range of applications

Potential Commercial Applications

- Paper-based packaging and manufacturing
- Fiber-based water and oil repellent surfaces
- Stainless steel vessels
- Implantable medical devices- killing bacteria

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More Information

Publications

[*Nanotexturing Creates Bacteria-Killing Spikes on Stainless Steel Surfaces*](#), Georgia Tech News Center, December 12, 2017

[*Fabrication of oleophobic paper with tunable hydrophilicity by treatment with non-fluorinated chemicals*](#), Journal of Materials Chemistry A, June 12, 2015

For more information about this technology, please visit:

<https://licensing.research.gatech.edu/technology/fabrication-approach-impart-anti-wetting-properties>

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