A Nano Solution to a Giga Problem: Novel Hydrophobic Coating

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Our aim was to develop a simple yet effective solution to help combat the prevailing water crisis. On research, we realized the unused potential in the use of hydrophobic coatings as a solution to help solve this problem. However, conventional hydrophobic coatings are expensive and, use harmful chemicals in their synthesis. We have tackled this problem by developing a novel, inexpensive environment-friendly hydrophobic coating consisting of a plant-based acid and Silicon dioxide. This coating is a versatile Hydrophobic Coating with multiple uses. Apart from the prime application as a hydrophobic coating on urinals to minimise the water used in flushing, this solution can also replace conventional hydrophobic coatings as a cheaper and environment friendly alternative along with additional use in many real-life scenarios such as an antifungal coating in porous surfaces and leather goods and, as an anti-corrosive coating on metal parts. The coating was tested for its efficiency using different methods and experiments. The idea was also tested practically in our school urinals where, we were able to save more than 75% of the water that was otherwise being used for flushing. A surface coated with this solution will minimize the amount of water needed to clean it, which, in turn will substantially lower the cost of manpower, electricity and chemicals that are required to maintain the surface and, in treatment of waste water. The prime application of this innovation would help save more than 12,000 Litres of water per person, per year which is otherwise used for flushing in urinals. The synthesized solution can be put into effect not only to help mitigate the existing water crisis but also as an environmentally safe replacement of conventional hydrophobic coatings.

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