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WAVEWALKER

Have monsoon streets ever felt like a parkour course? One puddle, one pothole, and one very soggy sock later, you wish you had WAVEWALKER. A sleek, water-defying shoe built for anyone who wants to actually enjoy walking or jogging in the rain.



The science of staying dry



Built tough: High-density EVA non-porous base that keeps water out. Zero leaks!



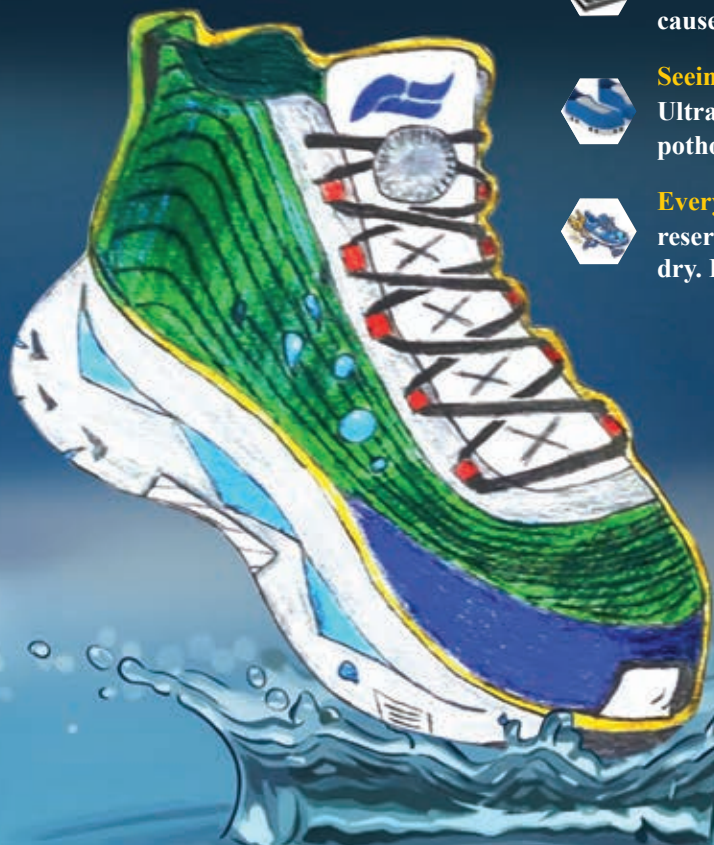
Physics, obviously: Superhydrophobic coating causes water to fall right off.



Seeing what you can't: Ultrasonic sensors detect sneaky potholes and warn you.



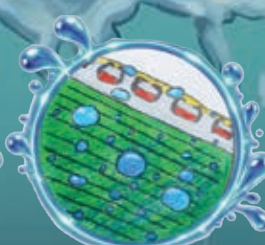
Every step counts: Stretchy heel reservoir pressure pumps itself dry. Pretty cool, right?



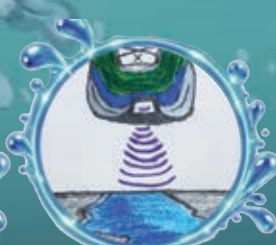
Rechargeable heel-mounted battery



Water-clearing heel system



Superhydrophobic coating



Submerged hazard detection with vibration

DISCLAIMER: Real scientific principles. Fictional ideas with a potential future.



The touch illusion Your Senses Are Lying To You

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Holding this newspaper, it feels solid, right? What if physics teaches us that you have never truly touched anything? The more deeper scientists explored atoms, they found out that what we experience as touch isn't really contact; rather it is an invisible field at work.

Meet the atom

An atom is the smallest unit of a chemical element that is made up of three particles: positive protons, neutral neutrons, and negative electrons. Protons and neutrons form the tiny, dense nucleus present at its centre, meanwhile electrons occupy shells or clouds around it. An atom is more than 99.99% empty space, for almost all of its mass is concentrated in the nucleus. If an atom were the size of a stadium, its nucleus would be roughly the size of a grain of sand at the centre.

The twist

So, how does a tiny atom prevent us from touching a surface? We all know that opposite charges attract, while like charges repel - known as the electromagnetic force. When two atoms approach

each other, their outer electrons interact. The Pauli exclusion principle also prevents electrons from occupying the same quantum state, like the 'one seat, one student' rule. This creates Pauli repulsion, which, together with electromagnetic interactions, strongly resists atoms being pushed into the same space.

Why does it feel real?

Of course, you feel something when you touch it. This is because your body contains sensory mechanoreceptors which respond to pressure and vibration - these receptors send electric signals to the brain, which then respond to the perception of 'touch'. Eventually, your brain isn't lying to you; the poor thing just simplifies the invisible physics into something that our brain can understand.

Ironically, the very forces that prevent your hand from passing through a table are what allow you to rest it on one. Without these invisible interactions, the world as we know it would lose the structure that holds it together. So, the next time you pick up a newspaper, remember: what feels like simple contact is actually a fascinating dance of electromagnetic forces and quantum rules.