Inspired by Mother Nature

Incredible Solutions from the Nanoscale

We still do not know one thousandth of one percent of what nature has revealed to us. - Albert Einstein

Since the dawn of time, we humans have gotten some of our best inspiration from nature. Poets, artists and scientists - you name it, all have been drawn to the awe-inspiring beauty and magnificence of the wild. Nature has spawned tons of cool ideas that have made the world we live in a better place to be - from airplanes to velcro.

You can think of "Mother Nature" as the ultimate teacher. The one who doesn't make you just memorize or take down notes for hours on end but lets you learn by discovery and exploration. She expands your mind not from stuffing it with trivial facts, but by taking your hand and gently guiding you to the signposts that help you to come up with your own questions and hypotheses.

Today, we are witnessing a whole new world of learning from nature. It's as if our teacher has opened the door to let us out for recess - and we've got a whole playground ahead of us for discovery. What is this new playground the doors have opened to? Why is it so fun-filled and packed with adventure?

The "playground" is nanoscience and it is changing the way we do technology. Nanoscience is the study of nature on a super-small scale of 1-100 nanometers (1 nm = 1 billionth of a meter!). Nature builds with atoms and molecules on the level of the nanoscale. Able to study the world on this very small scale, nanoscientists are now able to unlock many of the former age-old "secrets" of nature. Not only that, but nanoscientists are actually able to tinker around with atoms and molecules themselves and get them to imitate nature's patterns. It's a bit like playing around in the sand box: the right shovel (tools) plus a bit of ingenuity (mind) and mounds of tiny particles (matter) can yield some fantastic creations.

Some of the incredible and strange things in nature which nanoscientists are learning from include sponges, shells, leaves, and butterfly wings. These common objects offer a host of discoveries that force us to admit that we still have a lot to learn from nature. Some inspiring technological advancements that may come out in the next few years from such investigations include: improved LCD screens modeled on iridescent butterfly wings; impenetrable but lightweight materials modeled on the shells of sea mollusks; self-cleaning cars based on the surface properties of the Asian lotus flower; harvesting clean water modeled on the beetle; and stronger, more durable optic fibers for telecommunications based on optical fibers produced by deep-sea sponges!

By taking a pause from city-life and listening to nature, we not only refresh our lungs, but we also join an age-old human tradition of facing the unknown and getting inspired. Nanotech takes this tradition to the next level, by introducing new worlds of discovery.

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