



# RESEARCH2REALITY

Shining a light on research & innovation.

## The Small Matter of Big Solutions

An interview with Professor Jillian Buriak  
Nanomaterials Chemist, University of Alberta

### Why is nanotechnology important to renewable energy?

What nanotechnology is, is a number of different concepts, ideas, and approaches for doing many things. So for instance, we work a lot in the area of renewable energies so we're using the concepts that we've learned from nanotechnology – being able to control things at the atomic and molecular scale – to be able to make more efficient solar cells, for instance; to be able to take energy from the sun and transform that into electricity that you can then use for anything. So there are a few reasons why getting away from fossil fuels is important. When you look at the amount of energy that humanity's going to require by say 2050, using the most conservative estimates that we've got, our energy needs are going to double; and by 2100, they're going to probably triple. When you think about the security, the economic security, the social security of humanity, as this living species, as a civilization on this planet, we really need inexpensive sustainable sources of energy.

### Why is it important to discuss research?

I call this a quiet revolution because for the first time, I think in a history of science, is that you've got the distinct silos: you got the biologist talking to physicist, talking to the medical people, all using the tools and the enabling technologies of nanotechnology to solve these big problems. I think that we have a very important responsibility to share with the public our results, to be able to be accessible because I'm paying the bills, you're paying the bills, we're all paying the bills as taxpayers. And we should be available, and we should be able to speak freely about our research because that's what the public pays us to do.