

Revolutionizing Everyday Life with Chemistry

TSUJIOKA Kento

Anan Kosen (NIT (KOSEN), Anan College)

“Chemistry ought not to be for chemists alone,” said Miguel de Unamuno, a Spanish philosopher.

Today, I’d like to give a speech about chemistry. However, before we get started, let me ask you a question. What comes into your mind when you hear the word “chemistry”? Perhaps, atoms and molecules? Maybe a white lab coat and a flask? Neither is wrong, but chemistry exists much closer in daily life. For instance, the clothes we are wearing, the painkiller I took yesterday, and the croissant I ate this morning are all chemical substances, which are all chemistry itself.

One time, my parents scolded me for mixing detergents labeled. “Caution: Do not mix.” At that time, I couldn't figure out why I was chastised, but after studying chemistry, I realized how dangerous it was to play with detergents. That was the first time I encountered chemistry in my daily life, and I've been fascinated by the field of chemistry since.

It may be out of the blue, but can you come up with something you have that doesn't contain plastic? It's quite hard, isn't it? Most of the things we use in our daily life contain some kind of plastic. For instance, the bottle you drink water from, the car you use to commute, the smartphone you play with, and the clothes you wear are all made from plastic. Plastic is ubiquitous and indeed one of the most chemical-related things in our daily lives.

The “chemistry in everyday life” I want to focus on today is plastic. The first commercially available plastics were invented by Leo Baekeland, a Belgian chemist, in 1907. Baekeland's invention has unquestionably revolutionized our society by transforming the way we live once and for all. The most visible evidence is our dependency on plastic. On the one hand, plastic is used in water bottles, shoes, and smartphones, you name it. On the other hand, plastics are also used in unexpected things such as diapers, contact lenses, and bulletproof vests.

Notwithstanding its usefulness, plastic has become more problematic lately. The main reason behind this is that many of our modern environmental problems are ascribed to plastic. The biggest and most visible problem is plastic pollution caused by the non-biodegradable characteristic of plastic. Plastic pollution has claimed the lives of thousands of animals across the globe and has been estimated to cost billions of dollars in economic damage. Even more worryingly, recent studies are showing that pieces of microplastic have been found in the human bloodstream.

Solving this problem requires organic chemistry, one of my favorite fields. Organic chemists are working to develop "biodegradable plastic", which will decay within months in the natural environment, unlike conventional plastic, to eliminate the

problem. However biodegradable plastic also has problems such as durability and cost. But there seems to be a trend away from conventional plastic, even Starbucks is using paper straws recently. So, we're surely heading in the right direction in solving plastic pollution.

After knowing those problems, a quote suddenly comes to mind." Chemistry never hurt anyone, the people who misuse it do." as Mr. Ichimori, my former chemistry teacher at Anan college once said. The moment I heard those words, I was deeply impressed, and I aspire to become a chemist who could make the world a little better with the power of chemistry just like Leo Baekeland once did.

What I want to convey today is, chemistry lies much closer in our daily lives than you may imagine and depending on the way we use it could revolutionize our everyday life. So why don't we take some time to appreciate it?

Thank you so much for your time and attention.