



ALPHA MOMENTS IN INDUSTRY

A PROPRIETARY NEW POLYMER FOR AUTOMOTIVE

CHALLENGE

CREATING A PROPRIETARY, COST-EFFECTIVE POLYMER

Wei Chan,* a chemist at a major company that develops compounds for the automotive industry, wanted to create a proprietary polymer rather than continue to purchase a similar material from a manufacturer. His goals were to improve the product, by increasing the amount of graphene present, and cut costs.

To meet those aims, Chan needed an in-depth understanding of a process called gel permeation chromatography (GPC), which is used to separate molecules by size, and in some cases weight, to analyze polymers.

ALPHA MOMENT

COMPLETING THE REACTION AND DEVELOPING A NEW POLYMER

To start, Chan quickly performed a search on **ScienceDirect**, a comprehensive online database of Elsevier publications, and found a substantial amount of data on GPC.

“The information I uncovered showed me how I could apply GPC to the type of polymer I was working on,” he says. “From there, I understood how it was made and how I could complete a reaction.”

With that knowledge in hand, Chan was then able to develop an initial version of the polymer that he could analyze before developing it at scale.

BUSINESS IMPACT

SAVING THOUSANDS AND GENERATING NEW REVENUE

Without the data he found through **ScienceDirect**, the chemist’s process would have been more time-consuming and costly.

“I probably would have had to go through external labs to ask how they did it,” Chan explains. “I also probably would have had to pay a hefty fee.”

Estimating polymer analysis at a cost of \$4,000–\$5,000 each, and considering his team would have likely tested five of them, Chan saved at least \$20,000 by expediting his research process. He also saved one month’s time, freeing him to focus on new projects. Most importantly, the improved product is now widely used by the auto industry, bringing in a constant stream of new revenue.

**Names have been changed to protect customer intellectual property*