Scholar 331

Chapter 331

He also hoped that Professor Stanley wouldn't take the "final exam" answers and copied it onto the "midterm exam".

Around half a week later, the Organic Chemistry Conference finally came to an end.

Lu Zhou didn't change his itinerary; he flew back to the East Coast.

After arriving at Philadelphia, Lu Zhou went to the Star Sky Technology office and met with his manager, White Sheridan.

Lu Zhou gave a copy of the relevant contracts to White and gave a brief overview of the lawsuit. He told White to hire the most capable team of lawyers and prepare for war.

If everything went as expected, Mobil Chemical would definitely try to delay and drag this for as long as possible.

However, Lu Zhou didn't care.

He was able to afford the litigation and attorney fees…

…

After the Adams Chemistry Prize, Lu Zhou placed all his energy back into research.

Sarrot's laboratory ran into problems with the carbon molecules and was stagnated.

On the side of the Jinling Institute of Computational Materials, they continued to study a stable preparation method for HCS-1 materials while attempting to improve the HCS-1 material to be ready for the industry.

As for Lu Zhou, he was working on the mathematical model for the positive electrode material of the lithium-sulfur battery and was improving his computational materials science theory by doing experiments.

All of this had to be done step by step.

The day before the end of spring break, Connie returned to Frick Chemistry Laboratory and began the next set of experiments with Lu Zhou.

Connie put on a white coat and was about to prepare for the upcoming experiment when he suddenly remembered something and said, “Professor Chiric said that I can graduate soon.”

Lu Zhou was checking the instrument, and he gently lifted a test tube and made a toasting gesture with the test tube.

“Congratulations.”

Obviously, this was only a gesture.

Lu Zhou couldn’t actually drink the organic electrolyte solution in the test tube.

“Thanks to your thesis.” Connie looked at Lu Zhou and said, “Because of you, I can now graduate.”

Lu Zhou smiled and said, “You’re welcome, you deserve it.”

The thesis about HCS-1 on Science naturally had Lu Zhou as its first author.

As for the second, third, and fourth author, it was ranked by contribution. There were researchers from Sarrot’s research institute, and Connie was also on the list.

Finally, after adding the two Science theses to Connie's previous work, Connie would be able to receive his PhD by the middle of this year.

Lu Zhou asked, "Do you have any plans for your future?"

"I originally planned to go to MIT to do two years of postdoc research, then become a formal researcher." Connie looked at Lu Zhou and said, "But now, I think staying in Princeton is pretty good."

Lu Zhou looked at him and said, "Have you thought about it carefully? Massachusetts Institute of Technology is the paradise for engineering majors; you might be better suited there."

Princeton was more of a theory-based university, and its chemistry department wasn't particularly impressive.

Doing a nanomaterials postdoc here wouldn't be as helpful as doing one in Massachusetts Institute of Technology.

Connie nodded seriously and said, "I've thought about it. The people you do experiments with is more important than where you do the experiments at."

Lu Zhou smiled and said, "I'm happy you can think this way. If you want, you can join my research team!"

Connie smiled and said, "Of course I want to, thank you so much!"

A postdoctoral degree wasn't a degree. It referred to scholars that had recently obtained a doctoral degree but hadn't become a full-time researcher yet.

Generally speaking, postdocs would have supervisors as well.

However, their supervisors were different as their supervisors would be more cooperative than authoritative.

Especially in foreign countries, the relationship between the supervisor and the postdoctoral researcher was almost colleague-like.

Connie's professional knowledge was impressive, but it still depended on how he used it.

Although this guy seemed to be a hunk and didn't look like a researcher at all, Lu Zhou didn't care about this stuff. Lu Zhou only cared about his abilities in conducting experiments.

Also, Connie could also be a part-time bodyguard…

After all, places like the MRS Conference weren't peaceful at all.

After completing the experiment, Lu Zhou registered the data on the computer.

Suddenly, Xiao Ai's notification popped up on his laptop screen.

[Master! Someone is video calling!]

Lu Zhou closed the pop-up and said, "I know, open it for me."

[Okay!]

Lu Zhou: "…"

After more than a year of upgrading, Xiao Ai could now accurately identify Lu Zhou's voice, and Xiao Ai could even understand Lu Zhou's emotions.

This was undoubtedly a great improvement.

However, Lu Zhou felt like Xiao Ai could do more…

Lu Zhou looked at Yang Xu through the screen and asked, “What’s up?”

“Good things!” Yang Xu smiled and said, “The idea of synthesizing the HCS-1 material through glucose as a precursor is working! Our experiment is a success!”

Lu Zhou heard this news and smiled.

A stable synthesis of HCS-1 material was the first step to HCS-2 material, and the only way to solve this problem was to create more HCS-1 samples. Also, the experimental data it created could be used to analyze the reason why it could inhibit the diffusion of polysulfide compounds.

Lu Zhou could further improve his theory by using this data.

“This is a piece of good news. Remember to send the experimental data to my email.”

Yang Xu nodded and said, “Of course, I already told Qian Zhongming to send it. You will receive the experiment report soon!”

The main reason for the call was to tell Lu Zhou the good news.

However, before ending the call, Yang Xu suddenly remembered something else that happened.

“Oh wait, one more thing.”

Lu Zhou: “Say it.”

Yang Xu hesitated for a moment before he said, “Here’s the thing, there was a researcher that applied to our institute…”

Lu Zhou said, “Do you really need to report this small matter to me? Just make a judgment yourself.”

Yang Xu was helpless.

“The problem isn’t his professional abilities. I’ve looked at his resume, and it’s pretty good. In fact, it was even better than most PhD holders. He also has experience in thesis writing.”

Lu Zhou looked confused. “His salary requirement is too high?”

“Not that.” Yang Xu coughed and said, “It’s just that he has a unique background…”

Chapter 332

The writer must have a high level of professional knowledge and a comprehensive understanding of the background of the research.

After all, the opening report is to convince others to invest in you. Although the final result would depend on the investors, a report should still be taken seriously.

Also, the person responsible for the opening report is also responsible for the oral defense. Therefore, whoever writes the opening report is certainly more skilled than the average researcher.

In addition, if Yang Xu didn’t believe that Liu Hong has a special talent, he wouldn’t have brought this matter to me.

Lu Zhou thought for a moment before he said, “If you think he’s good, then hire him. As long as he wasn’t fired because of academic misconduct, I’m fine with it.”

Right now was the early stages of the Jinling Institute of Computational Materials, and they needed talent.

If the Massachusetts Institute of Technology postdoc thought he had value, then he should be hired.

“I understand, but that’s not the problem.” Yang Xu sighed and said, “I heard from my classmates in China that Wang Haifeng is well known in the domestic materials science community; he might even become an academician in a few years. Making him your enemy might not be a good idea.”

Lu Zhou said, “It doesn’t matter. From what I’m seeing, we’re getting a talented person to help with our research, so it’s worth it.”

What a joke, I’m a “Nobel Prize” level scholar, why do I have to care about some random “pre-academician”?

Not to mention, Wang Haifeng is only known domestically.

Also…

Lu Zhou smiled and said, “Also, if I don’t hire this guy, he might even thank me.”

Yang Xu smiled and said, “You’re right, I’m overthinking it.”

Lu Zhou said, “Oh yeah, remember to make him sign the confidentiality agreement.”

Yang Xu nodded. “Of course.”

…

Liu Hong sat outside Yang Xu’s office, and he looked nervous.

He looked like a prisoner sitting in court, waiting for the judgment of his fate… even though he had done nothing wrong.

However, this wasn't an easy decision for him.

This meant that his efforts for the past two years would be wasted. He had to start all over again with a master's degree. He would also offend a famous person in academia.

Although Wang Haifeng was nothing compared to Lu Zhou, it was still bad to make enemies.

Liu Hong didn't know if this decision was a curse or a blessing.

Liu Bo stood next to him and sighed.

He went to the water dispenser and got a cup of water before he said to Liu Hong, "Friend, drink some water."

Even though they had to accept working for long hours and being ordered around all day, researchers still had their dignity. Being sent on a spy mission was ridiculous…

Most people often chose to endure the demands, but some people wouldn't.

Liu Bo felt sympathetic that Liu Hong had such a heartless supervisor.

A supervisor could force a stellar student to stay and use them as cheap and high-quality labor.

Liu Bo was well aware of this. Even Jin Ling University had supervisors like Wang Haifeng— every university did.

Everyone had to be cautious when choosing their supervisors.

Liu Hong shook his head and nervously said, "No thanks… Please, I just want to start as an intern! Just give me a chance to prove myself!"

Liu Bo said, “No point saying it to me, I don’t manage things around here.”

Suddenly, a third voice joined the conversation.

“Willing to start from an internship position? I’ll remember you said that.”

Yang Xu was outside the office door.

Liu Hong was stunned. He quickly stood up from the sofa and said, “Yes! I will prove my abilities!”

“Not bad, you’re ambitious.” Yang Xu looked at Liu Hong and said, “From tomorrow onward, you will work at the computational materials science analysis department. Liu Bo will arrange work for you. But I have to tell you that you won’t be able to conduct any experiments during your internship. Your main job will be cleaning equipment, sorting chemicals, and etc. Sounds good?”

When Liu Hong heard that his resume was accepted, he said with excitement, “No problem! I accept!”

“Then try your best, this is not a vacation.” Yang Xu walked up and patted Liu Hong’s back as he said, “Oh yeah, if you can, try to get a PhD, it’s very useful.”

Liu Hong smiled and said, “Okay!”

Qian Zhongming was standing beside Liu Bo who then poked his arm and said quietly, “This is their world.”

Qian Zhongming looked as normal as ever.

“What world?”

“Our boss’ world.” Liu Bo couldn’t help but say, “Our boss is at a level where he doesn’t even need to poach himself; people are willing to jump ship just for him.”

Chapter 333

Wei Wen sat next to them at the desk while looking at them with jealousy.

Jerick, who was in the same cohort as himself, already chose a research direction.

However, it had been half a year, but Wei Wen hadn’t been involved in any kind of research.

Lu Zhou could sense Wei Wen’s jealousy so he said, “You don’t have to envy him. If you want to research mathematical physics, you have to spend more time and effort than him.”

Mathematical physics and computational chemistry were different; the latter was experimental based and tried to explain phenomena with new theories, while the former went beyond experiments and entered the unknown field.

The effort needed to break into a newly emerging field versus a mature field was completely different.

Wei Wen obviously knew this, so he was only a little jealous.

He nodded and said, “Okay.”

Jerick raised his hand and asked, “Professor, what do you need me to do?”

Lu Zhou didn’t answer this question directly. Instead, he smiled as he replied, “This is a good question, come somewhere with me. You’ll know when you get there.”

…

Any research began with reading theses.

Whether it was theoretical research or applied research.

Lu Zhou didn't rush to start calculations after receiving the experiment data. Instead, he buried his head in the library.

Lu Zhou planned to do this work by himself, but now he had two helpers. One was Jerick who was interested in computational materials, and the other was a postdoc in computational materials.

Jerick was sitting next to Lu Zhou as he read a piece of literature when he suddenly asked, "Professor, how did you come up with the idea of using hollow carbon spheres to solve the shuttle effect?"

Lu Zhou casually read the documents as he replied, "Scientific intuition? And inspiration. Actually, there is no correct thinking when it comes to decisions like this, only a relatively appropriate idea."

"Relatively appropriate idea…" Jerick looked at the documents in his hand and nodded.

With the help of the two assistants, researching theses didn't take too long.

Reading all of the relevant documents only took a week.

But the work after that wasn't so easy.

Lu Zhou had to do the computing part himself.

The last day of March, Lu Zhou didn't get to his office at the Institute for Advanced Study. After he got out of bed, he walked into the study room next to his bedroom.

He sat in his tiny room and made himself a cup of coffee. He then opened the drawer and took out a pen.

Lu Zhou wrote down a line of words on a blank page.

[Theoretical Model Of Electrochemical Interface Structure]

Electrochemical interface theory was an important pillar of modern electrochemistry and one of the classical problems in theoretical chemistry. It was like the twin prime guess in mathematics, where it occupied a central position in a certain type of problem.

The concept could be traced back to the early 1980s when the interface molecular model was proposed.

Since then, the classical concept of electrochemical interfaces had been transforming into the modern concept of condensed matter physics.

Due to the development of technology, simulations such as the molecular dynamics simulation, Monte Carlo simulation, and other simulation methods were born. This made the theoretical model of the electrochemical interface more applicable.

Even then, no one could provide a theoretical model that could reasonably explain the various microscopic electrochemical processes occurring on the interface.

Two examples.

How to explain the differential capacitance curve of a polycrystalline metal electrode?

How to explain the origin of the capacitance peak in the differential capacitance curve of the Hg electrode in the electrolyte solution of different solvents?

Although these sounded like simple problems, they had never been answered before.

Answering these questions would mean at least two or three Nobel Prize in Chemistry. The Nobel Committee paid more attention to theory than application.

After all, if someone was able to come up with an answer to these questions, even if it wouldn't affect a company's bank account, it would greatly impact civilization. It was more important than the invention of the modified PDMS.

Even Lu Zhou couldn't solve every single problem.

However, the Group Structure Method was based on additive number theory.

If he could use mathematical properties to describe the interface properties, then based on this, he could establish a theoretical model of the electrochemical interface structure. He could build a theoretical tool that could answer all of these questions!

Lu Zhou looked at the thesis title on the page before he closed his eyes and took a deep breath.

The next time he opened his eyes, there was an unprecedented concentration in his mind.

His past six months of work was paving the road for this.

He had collected a large amount of data for this.

And right now, he just had to finish the job!

…

As time went by, the paper bin in the corner of the study room gradually piled up.

Whenever Lu Zhou was tired, he would go to sleep in his bedroom. After he woke up, he would come back to his study room and continue to think.

Other than for his meals, he didn't even go downstairs.

He never even went outside the house.

Lu Zhou used countless amounts of pen and paper. He wrote down the last equation on the A4 paper and suddenly stopped.

Lu Zhou sat there for about an hour or so before he scratched his head and threw the pen away.

He paced back and forth in his study room while repeating the same sentence.

“Chemistry needs my theoretical model…”

Suddenly, Lu Zhou remembered something, and his eyes lit up.

He stopped walking and looked at the mountain of papers.

“I need a super…

“I need a supercomputer for computational chemistry!”

Chapter 334

“Jesus… There’s dust on the door handle. When was the last time our professor left the house?” Hardy looked at the dust on his hand and said, “I’ll definitely die if I stay in the house for a month.”

He was a member of the Princeton Football Club and played football every evening. If he couldn’t play for some reason, he would feel uncomfortable the next day.

Is there really someone that can lock themselves inside their house for over a month, away from society?

Hardy would die if it were him.

Qin Yue said, “This is the difference between our professor and you. If you spent less time playing football and more time on research, I bet we would progress much faster.”

The two guys were getting beaten by the little girl. Even Qin Yue, who was usually quite reserved, couldn’t help but criticize his teammate.

“Nope,” Hardy shook his head and said, “the reason is the difference in IQ.”

Vera: “…”

Qin Yue: “…”

Jerick: “…”

Wei Wen: “…”

The Brazilian guy saw that his friends were not speaking, and he scratched his head as he asked, “Why are you guys looking at me?”

I’m embarrassed…

Jerick smiled and said, “Nothing… I just think that it takes courage to admit this. I admire you!”

Hardy smiled and patted his friend’s shoulder as he said, “You’re right, we’re the same.”

Vera, Qin Yue, Wei Wen, and Jerick: “…”

F*ck sake!

However, it made sense, and they couldn't refute this.

Wei Wen coughed and said, "Don't forget what we're here to do. Qin Yue, go ring the doorbell."

Qin Yue said, "But… You do it."

Chapter 335

And that person was David Shaw.

However, Lu Zhou had only met him briefly at the MRS Conference…

"We're here".

Lu Zhou was awakened by Jerick. When he looked outside, he saw the D.E Shaw Research Institute.

He was at the Columbia University campus.

Lu Zhou was surprised that it was already night time as they should have arrived in the afternoon.

"How long did I sleep for?"

"Four hours… The traffic was bad," Jerick replied. He then added on nervously, "Professor, although I know you're doing a great research project, your body is the most important thing."

Lu Zhou rubbed his eyes and said, "I am in good health, I haven't been sick since coming to Princeton." He then sent David Shaw a text message to tell him that he had arrived.

Before he came, he made an appointment with David beforehand.

Lu Zhou got out of the car and soon the Wall Street investment legend greeted him with open arms.

“My friend, you’re finally here!” David Shaw gave Lu Zhou a warm hug, and the two started to walk toward the research institute. David said, “I knew that you would come this year.”

Lu Zhou said, “You knew?”

“Of course.”

“Do you have scientific evidence?”

“Nope! But I could tell from my intuition.”

Lu Zhou looked at David strangely.

If he’s not joking, then his intuition is scarily good.

David brought the two to his office and made two cups of coffee before giving them to Lu Zhou and Jerick.

Then, he made himself some tea and sat down across the pair. He looked at Lu Zhou and asked, “Go ahead, what kind of exciting things do you need my help with?”

Lu Zhou: “Actually, I don’t know if it’s appropriate to ask you this… I want to look at Anton, is that okay?”

“Piece of cake, it’s not a secret. Anyway, Anton is going through maintenance. I’ll bring you there,” David said. He then looked at Jerick and asked, “How about you? Come with us or stay here?”

Jerick didn’t expect the big man to talk to him, so he said, “I…”

Lu Zhou said, “Just come with us, it’s good for you.”

David smiled and said, “Then let’s go.”

…

Anton was located in the corner of the D.E. Shaw Institute and was housed in a separate building. Originally, Lu Zhou thought that this supercomputer would be very large. However, when he really saw it in its glory, it was surprisingly low-key.

This legendary computational chemistry weapon only occupied a dozen square meters or so.

However, for this dozen square meter chassis, David built a supercomputer center that was 100 times larger.

Not just that, but David said that the entire staff and supercomputer center was to keep Anton running.

“Isn’t that shocking?” David smiled at Lu Zhou and said, “Most people who see this will have the same expression as you.”

“It is shocking…”

Lu Zhou was shocked by its compactness.

Suddenly, Lu Zhou had a strange idea.

What if I put Xiao Ai inside?

Of course, this was only an idea.

He couldn’t do this…

In addition to the three people, there were several employees in the room that were supervising Anton.

David gave Lu Zhou a tour of the supercomputer and showed him the performance of Anton.

After hearing his introduction, Lu Zhou only had one question.

“This thing is expensive, right?”

“It is expensive, but I don’t want girls or cars, and money isn’t useful to me.” David shrugged and patted the chassis as he said in a joking tone, “This is my girl.”

Lu Zhou said, “Then your girl is quite high maintenance…”

David smiled. “Of course, that is one of the reasons I love it.”

Every time Anton flashed a signal light, hundreds of dollars were being burned.

There was no doubt that David Shaw was the least materialistic person on Wall Street.

He had no yachts, luxury cars, private planes…

David looked at Lu Zhou and asked, “Then, can you tell me why you came all the way here?”

David didn’t believe that Lu Zhou came here just to look at the supercomputer, Lu Zhou had probably encountered a problem that normal computers couldn’t solve.

In fact, David’s intuition was correct.

Lu Zhou didn't hide his intentions, and he made a request.

"I want to borrow your equipment to do an experiment."

David was interested. "Oh, what experiment?"

Lu Zhou: "It's about a theoretical model of the electrochemical interface structure."

The laboratory suddenly quieted down.

The engineers who were debugging the computer didn't care. However, the doctors who were doing chemistry calculations paused.

Everyone turned their heads and looked at Lu Zhou.

Especially David… He tried to hide the shock on his face when he said, "Unbelievable… You actually made a theoretical model of the electrochemical interface structure?"

Lu Zhou was embarrassed at all this attention. He then said, "Strictly speaking, not yet. I need to use a supercomputer to perfect my model. Can I please rent your equipment?"

"There's no need for payment," David shook his head and said, "I already have enough money. You should know how that feels. Looking at the string of numbers in your bank account and not knowing how to spend it is a burden."

Lu Zhou: "…"

Is he showing off?

Lu Zhou thought about it for a moment, but he couldn't agree with him.

Although his material needs were met, if someone wanted to give him a billion or two, he certainly wouldn't refuse.

If it were the prize money, even thousands would make him happy. However, this type of happiness wasn't related to money, it was related to winning the prize.

David said, "I only have one request."

Lu Zhou asked, "What?"

"You don't have to add my name to the thesis, but I hope that you can include the Anton Supercomputer Center of the Deshaw Institute as the location of the research institute," said David. He then looked at Lu Zhou and said sincerely, "I hope that the entire chemistry community knows that this came from Anton!"

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In some sense, Lu Zhou choosing Anton to carry out this experiment was inevitable.

A normal supercomputer couldn't perform molecular dynamics simulations efficiently.

However, Anton was different, each chip was dedicated to computational chemistry.

It had a total of 512 compute nodes, which could achieve 17,000 simulations per day of protein-water systems, consisting of 23,558 atoms.

In contrast, a general-purpose supercomputer with the same number of processors could only reach hundreds of simulations per day.

Because of this, Anton was named "the weapon of computational chemistry".

David was an absolute genius.

He was knowledgeable in finance, parallel computing, and in polymer chemistry.

Unfortunately, Anton was too expensive; most research institutions simply couldn't afford to rent it. Otherwise, the Nobel Prize committee might even consider nominating him for a prize.

It would be similar to the biologist, Jacques Duboche, who was nominated for the 2017 Chemistry Prize for cryo-electron microscopy…

After Jerick drove Lu Zhou back to Princeton, Lu Zhou sent an application to Princeton to request for a month-long scholar visit at Columbia University.

Columbia obviously welcomed Lu Zhou's visit with arms wide open. They even arranged a temporary dormitory for him in the vicinity of the institute.

Theoretical research that did not involve patents was always easier to reach cooperation agreements than the research in the application field.

This was especially so for people like Lu Zhou and David who didn't need any money.

After signing a cooperative research agreement which outlined the duties of both parties, the experiment would soon begin.

David showed great interest in the collaborative research project.

Not only did he adjust his original plans for his experiment to accommodate for Lu Zhou, but the entire workforce of the D.E Shaw Research Institute was put into Lu Zhou's project.

Lu Zhou soon witnessed Anton's combat power.

On the day of the experiment, Anton Super Center.

A massive parallel computing project was about to begin.

Lu Zhou and David stood behind as they watched the experiment.

“Experiment Group 1 is in place!”

“Experiment Group 2 is in place!”

“…”

“Begin the experiment!”

The blue signal lights were constantly flashing.

In the digital world, Anton used its powerful computing power to simulate the mathematical model provided by Lu Zhou.

The first experiment lasted for nine hours!

Unfortunately, the results of the experiment were not ideal.

David looked at the experiment report given by the engineer of the supercomputing center, and he frowned while saying, “Your mathematical model is too complicated… Is there a way to simplify it?”

Lu Zhou shook his head and said, “I tried to simplify it, but it was very difficult.”

He would’ve simplified it if it was possible; he wouldn’t have waited until now to simplify it.

David rubbed his chin and began to think. After a while, he said, “Then I guess we have to come up with another solution.”

David was not an expert in the field of mathematics. He could not simplify complicated mathematical equations. However, attacking this problem from a parallel computing perspective, it was theoretically possible to improve Anton’s calculations by adjusting the software.

Lu Zhou said, “Thank you.”

“No worries,” David waved his hand and said in a joking tone, “at least your mathematical model is in the scope of Anton’s abilities. If it were any more complicated, I’m afraid we would need a quantum computer.”

…

Lu Zhou’s visit to Columbia University was not something that needed to be kept secret. Because he frequently visited the D.E Shaw Institute, the news quickly spread across the campus of Columbia University.

Many people were curious about this Crafoord Prize and Adams Chemistry Prize winner who was only in his twenties. Very few people could make such outstanding achievements at such a young age, especially in two fields— mathematics and chemistry.

Of course, Columbia students weren’t the most interested in Lu Zhou. The one that would be most interested in him was his opponent in the field of lithium-sulfur batteries: Mobil Chemical.

They heard the news about Lu Zhou and was nervous as hell.

Not to mention, it was such a big piece of news…

Binghamton University, Institute of Materials Science.

Woods, who just finished a meeting in New York, immediately came over to Binghamton.

“Bad news! Lu Zhou found David Shaw to borrow a supercomputer!”

Stanley wasn’t surprised about the news that Woods had provided, and he asked, “Is it fine for you to come to the laboratory every two days?”

Stanley was obviously saying that there was no reason for Woods to come all the way here; Woods could have just called Stanley.

“I’ll do anything as long as we win the race,” Woods said.

He sat on the sofa in the laboratory and sighed before he said, “F*ck sake! How did Lu Zhou suddenly find David Shaw, how?”

If Lu Zhou collaborated with other laboratories, Exxon Mobil could use its own influence to put pressure on the laboratories’ funding partners, thus delaying their progress.

But David Shaw was an exception; this guy was a famous Wall Street freak who was completely disinterested in money.

“This is normal. One of them is doing computational materials, the other is doing computational chemistry. It’s not surprising for them to get in bed together.” Professor Stanley stood in front of the scanning electron microscope while he waited for results of the experiment. He said relaxingly, “In fact, there is no need to be so nervous. Whether it is a perfect mathematical formula or a theoretical model, if it cannot be implemented in the experiment, it is useless.”

Who cares if your mathematics is nutty?

Who cares if you borrowed a supercomputer?

Computer simulation experiments are indeed a promising method, but in the end, it has to be implemented in experiments.

From trial and error, adding up the experience is the only way for materials science experiments.

Fortunately, Stanley already knew the answer, so he only had to figure out the working steps.

Woods asked, “I want to know how far are we from the finish line?”

Stanley stared at the molecular model on the screen and smiled.

“We are close!”

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Other than the computing engineers who were still talking about technical problems, everyone inside the research institute was bored and quiet.

Even the supercomputer was tired.

Over the course of a month, the D.E Shaw Institute spent more than ten million dollars on this mathematical model.

During this period, the D.E Shaw Institute continued to improve the calculation process, and Lu Zhou also continued to modify the details of his theoretical model by using the data from the calculation.

However, no significant results were produced.

David looked at the engineers and sighed as he said, “Sure enough, it doesn’t work.”

Lu Zhou was embarrassed. “How about I pay for the costs?”

David said in a relaxing tone, “No, it’s fine, the money is nothing. Research is like gambling, we just went to Las Vegas and lost.”

His scientific intuition told him that this idea was worth exploring.

Therefore, he was willing to spend the money.

However, he couldn’t help but add on, “Although I’ve never lost this much at Las Vegas before.”

There was a summary meeting at the end of the experiment.

Everyone was silent at the meeting.

Lu Zhou briefly talked about his own point of view. The heads of the two experiment groups talked about the experiment.

As for David, he stayed silent until the end of the meeting.

“Do maintenance on Anton, and start the 32nd experiment three days later.” David looked at the engineer closest to him and simply said, “Making sure Anton is running at its best before the next experiment.”

The engineer nodded. “Yes, boss!”

“I need to rest, and I’m sure you guys are the same.” David rubbed his eyes as he said, “That’s it, meeting over.”

…

A little setback was nothing for scientific research.

Even though they failed thirty times, no one talked about giving up.

After all, everyone knew that scientific truth wasn't that easy to obtain.

Lu Zhou was prepared to fail a hundred more times.

However, if the 50th experiment still didn't produce any results, he wouldn't let David pay for the experiment anymore.

Even though this money meant nothing to David, Lu Zhou felt that, morally, it wasn't acceptable.

Lu Zhou left the research institute and didn't return to his dorm. Instead, he walked around the Columbia campus.

It wasn't just Anton that needed a break, Lu Zhou also needed time to relax his overheated brain.

He planned to spend at least a day not thinking about the experiment.

Lu Zhou walked past the library, subconsciously avoiding all of the academic buildings.

He didn't know how long he had walked.

Without him knowing it, he was at the Columbia University philosophy building.

Lu Zhou couldn't help but smile.

"Is this fate?"

Even though he had fate with philosophy, he wasn't happy at all.

A bronze statue was erected on the lawn in front of the philosophy building.

The statue was of a man thinking while he was kneeling down, and his muscles were tensed as if he were immersed in a depressing thought.

This was one of the four "Thinker" statues of the world.

However, this statue was in a more deserted area than the other three. Lu Zhou was the only one on the lawn.

He placed his hands on the bronze statue and felt the coldness on his fingertips.

"I can see myself in you."

Thinking was a painful thing.

Especially endless thinking.

Suddenly, Lu Zhou had an idea.

If only someone could give him some inspiration.

Even just a little bit of inspiration…

But then, Lu Zhou smiled and shook his head.

Inspiration didn't come that easy.

This was the theory that could change the chemistry world, it wouldn't be cheap to buy inspiration.

Suddenly, something happened.

Something appeared in front of him.

A blue dialog box showed up in his field of view.

[Congratulations, user, for completing the reward mission!]

Lu Zhou: …?

What the hell?!

…

Unlike the D.E Shaw Research Institute, the Materials Research Institute at Binghamton University was cheering.

"Now is not the time to celebrate, the experiment has been successful but don't sink the ship at the last minute." Stanley then said to his assistant, "Apply for patents right now!"

The assistant nodded excitedly as he said, "Yes, professor!"

Professor Stanley looked at the SEM images and couldn't help but smile.

Preliminary analysis proved that the caged carbon molecule could inhibit the diffusion of polysulfide compounds to a certain extent, and the production costs were acceptable.

However, more experiments were needed to test the effects of applying it to lithium-sulfur batteries.

For example, to mix sulfur element with cage carbon molecules, they needed to find a suitable mixing ratio as well as a mechanical dispersion method. Also, they had to test out how much suppression effect that could be achieved.

However, this didn't affect the patent application; it also didn't affect the thesis submission.

The second they found a way to create caged carbon molecules, they had already succeeded.

Without a doubt, they had won!

They were the leading developers of lithium-sulfur batteries!

Chapter 338

Lu Zhou sighed.

He now knew how his mission was completed.

It seemed that Sarrot had lost.

However, Lu Zhou didn't blame him.

After all, Binghamton University was one of the top universities in North America. Although their overall strength was not comparable to Cornell University and other world-class universities, Professor Stanley was still one of the most famous scholars at Binghamton University.

Professor Stanley's research abilities definitely exceeded that of Professor Sarrot's.

Lu Zhou couldn't help but think.

It seems that I still have a long way to go before I can have a world-class research team.

Lu Zhou said bye and hung up the call.

Although Lu Zhou could tell him to stop doing the experiment now, Lu Zhou didn't have a good explanation as to why Sarrot should stop.

After all, there was no way Lu Zhou's "scientific intuition" could tell him that his opponent had beaten him.

Anyway, it wouldn't cost too much money to let Sarrot continue with the experiment.

Lu Zhou placed his phone into his pocket and whispered, "System."

He would definitely thank Professor Stanley if he had the chance.

However, Lu Zhou didn't know if Professor Stanley would accept his thanks…

…

[Congratulations, user, for completing the reward mission!]

[

Mission completion details are as follows: Analyze the carbon nanospheres under the modified PDMS film in Debris No. 1.

Mission evaluation: None (reward missions have no evaluation).

Reward: 50,000 materials science experience points, 10,000 biochemistry experience points. One lucky draw ticket.

]

Lu Zhou stood in the pure white system space as he quietly looked at the texts on the information screen.

When he saw the experience point reward, he was suddenly bursting with excitement.

50,000 materials science experience points!

If my materials science level up, maybe…

Lu Zhou quickly calmed down.

He suddenly remembered that it took 100,000 experience points to level up from Level 3 to Level 4.

Adding the 13,000 he had, he would only have 63,000 points.

“Hopefully I get something good in the draw.”

Lu Zhou sighed and clicked the lucky draw button.

A roulette wheel started to spin.

Lu Zhou yelled, “Stop!”

With its momentum, it spun for a couple dozen more laps before it slowly reached to a stop.

A text popped up on the screen.

[Congratulations, user, for winning the “special” prize.]

When Lu Zhou saw this, he felt nervous all of a sudden.

The last “special” prize was an unpleasant experience.

The last prize gave him a “patronage appreciated”, and he almost kicked the system in the face.

Undoubtedly, this could be worse than the “garbage” prize.

Come on!

[Received: Experience double award (last mission experience points doubled, effective immediately).]

Lu Zhou: …?

The f*ck?

It’s not a “patronage appreciated”?

Lu Zhou was stunned.

This system actually has integrity now?!

In some sense, this reward was more exciting than the blueprint.

Especially when Lu Zhou remembered that his last reward consisted of 50,000 and 10,000 experience points.

If it doubles, then does that mean…

Lu Zhou suddenly laughed out in ecstasy, and he immediately exited out of the lucky draw page before speaking to the translucent screen, “System, open my characteristic panel!”

The translucent holographic screen started to load.

Soon, Lu Zhou’s characteristic panel appeared in front of him.

[

A. Mathematics: Level 6 (4,000/600,000)

B. Physics: Level 4 (33,215/200,000)

C. Biochemistry: Level 3 (24,000/100,000)

D. Engineering: Level 2 (0/50,000)

E. Materials science: Level 4 (13,000/200,000)

F. Energy science: Level 2 (0/50,000)

G. Information science: Level 1 (3,000/10,000)

General points: 2,975 (one lucky draw ticket)

]

As expected, my experience points have been doubled!

Lu Zhou's materials science level went from Level 3 to Level 4, surpassing biochemistry, and was now at the same level as physics.

Lu Zhou's understanding of materials science would be further strengthened due to the level up. Although this didn't directly increase his materials science knowledge, it increased his materials science thinking abilities…

He received his award, did the lucky draw, and looked at his characteristic panel.

Now, it was time to choose his new mission.

Lu Zhou looked at the mission panel but didn't make a decision.

For him, the system was a tool and not his "boss".

Lu Zhou only had one goal for the time being, which was to complete the theoretical model for the electrochemical interface structure.

He didn't care about anything else.

He exited the system space and came back to reality. He felt a tingling sensation from his spine to his brain.

Within half a minute, this warm tingling sensation penetrated his cerebral cortex and began to spread throughout his brain.

Lu Zhou was standing in front of the “Thinker” statue when he absorbed the power and experienced the sensation that came along with the process.

This warm sensation was weirdly comfortable.

It was like his brain was wrapped in a warm bath while it was gently stroked.

Lu Zhou opened his eyes, and he felt more awake than ever.

It was like the exhaustion that he felt for the past one month had been removed in an instant.

However, what surprised Lu Zhou the most was the inspiration that was rushing into his brain.

The only thing Lu Zhou wanted to do now was to go back to the research institute.

If this inspiration disappeared, it wasn’t only him that would be affected.

It would affect the entire computational chemistry industry…

Chapter 339

Even though he didn’t have the information at hand, he would never forget something he had researched himself.

It didn’t take long to recall all of the information.

Lu Zhou took this chance to incorporate new ideas into his theory…

“In a system with N electrons, the total wave function can be written as the product of all single-electron wave functions…”

Lu Zhou wrote down the first equation on the blank paper.

[Ψ(r1,r2,…,rn)= ∏Ψt(rt).]

He didn’t stop; he continued to write the next line.

“Then, use the Hartree equation!”

Lu Zhou was gradually getting excited.

However, this was only the first step.

But he could see the light in front of the tunnel.

[{pi2/2m+V(ri)+1/4πε0∑∫drf|Ψj(rj)|2e2/|ri-rj|}Ψi(ri)=EiΨi(ri)]

[…]

The inspiration came like a tsunami, completely unstoppable.

His pen danced on the page, writing faster and faster.

Lines of formula appeared on the page, gradually building a theoretical model.

This theory included all of the cumbersome and complicated equations as well as the collision between particles, the interaction between electrons, and even the microscopic interactions.

“This should work!

“We don’t need to explain and describe the system wave function of each particle motion. We just need to find a spatial wave function that only has the particle density of three variables…

“All of the particles can be calculated, and we can use this to predict the physical properties of the material!

“Even if the prediction is within a range!”

Lu Zhou’s eyes lit up as he talked to himself.

The pen in his hand was like a sword, cutting through the unknown.

Lu Zhou was immersed in research; he completely forgot about time and everything around him.

He didn’t know how much time had passed.

When he finally stopped writing, he saw the dark night had turned into the light yellow of dawn.

The rays of morning sunlight shone on the antique bookshelves.

Lu Zhou looked at the draft paper. He then relaxed and finally smiled.

Several months of effort was for this moment.

He finally found the answer to a problem that had no answer.

Especially writing the last equation, it was like putting down the last brick in the wall of a building. He felt like the happiest man on earth.

That happiness was far greater than any material object could provide…

“Maybe this is what heaven feels like.”

Lu Zhou put away the pen.

Lu Zhou’s concentration attracted a red-haired man sitting next to him.

There were many people writing theses in the library, but few had a sense of purpose.

“Hey, dude, writing a thesis?”

Lu Zhou didn’t answer as he tidied up the stack of draft papers.

Although the theory was recorded in his mind, these were the precious manuscripts.

Maybe one day, he would donate them to a library or a museum.

But right now, he had to keep these things to himself.

“Theoretical chemistry?” The man didn’t care that Lu Zhou ignored him as he continued to ask, “What a coincidence, I’m also studying theoretical chemistry, who is your supervisor?”

Lu Zhou smiled and said, “I don’t have a chemistry supervisor.”

Lu Zhou actually wanted a chemistry supervisor to mentor him.

However, given that his theory was completely self-made, who could mentor him?

The red-haired man looked at him with disbelief as he said, “You’re an autodidact? Unbelievable… There are people that learn this stuff by themselves? What major are you in?”

Lu Zhou said, “I guess you can say it’s mathematics.”

Lu Zhou didn’t stay at the library for long. He took his manuscripts and went to the D.E Shaw Research Institute.

Although the sun was already up, the research institute was still brightly lit.

Anton sat in the middle of the room like a tall goddess.

The engineers at the research institute were busy working in front of the chassis.

They had to have been here all night.

It wasn’t just the researchers, even David Shaw himself was the same.

David Shaw stood in his usual spot as he stared at Anton from behind a glass panel.

Suddenly, David heard footsteps.

He turned around and saw Lu Zhou at the entrance of the laboratory.

David noticed his dark circles and the manuscript in his hand. “You stayed up all night? You should take a break, we’ll need your help in three days.”

Lu Zhou placed the manuscript on the desk as he said, “Or do we?”

The two locked eyes and laughed at the same time.

The researchers turned their attention and wondered what the two guys were laughing about.

However, neither David nor Lu Zhou explained anything.

Because there was no need for any explanation.

David said in a joking tone, “I’m guessing that we are very close to the finishing line.”

“Yes,” Lu Zhou smiled and said, “I can promise you that it is right in front of us.”

Chapter 340

“We did it! We did it!”

Lu Zhou heard the cheers from the researchers, and as he looked at the data of the experiment that was reflected on the screen, the knot in his heart finally unraveled itself.

“I guess the problem was my mathematical model after all.”

Just now, the researchers used the computational power of Anton to test Lu Zhou’s new theoretical model of Li electrolyte solution interface.

The experiment results were perfect.

With Anton’s help, Lu Zhou’s mathematical model produced perfect digital simulations.

The establishment of this theory would have a meaningful and far-reaching impact on the entire electrochemical field and computational materials field. Prior to this, people could only study the physical and chemical properties of electrochemical interface structures through trial and error.

But now, the establishment of the theoretical model of the electrochemical interface structure would provide a theoretical basis for scholars who studied theoretical chemistry.

Undoubtedly, this was groundbreaking work.

“I have to thank you, my machine here made a new breakthrough thanks to your mathematical model,” David said with a smile. “Maybe soon you will see a third-generation Anton.”

Lu Zhou was surprised by it as he replied, “I look forward to that day.”

There wasn’t a good reason why the powerful Anton still needed upgrades as it was future-proof for computational chemistry for at least a few years.

The entire computational chemistry industry would be thrilled to see Anton3.

The need for supercomputers was an advantage for both the computer science industry and the chemistry industry.

…

Since the experiment phase was over, it was time to write the thesis.

Lu Zhou left the D.E Shaw Research Institute and instantly went back to his apartment to sleep.

He slept until 9 a.m. the next day before he crawled out of bed. He then went to his computer desk and sat down.

Lu Zhou consulted David’s opinion and decided to submit the thesis to JACS 1 .

Compared to other journals, the impact factor of JACS wasn’t high, but it was well respected in the chemistry community.

After all, the impact factor was not the only factor that measured the influence of a journal. The total number of citations and references also mattered. Combining all of these factors, JACS ranked first in the field of materials and chemistry.

Lu Zhou opened the unfinished document on his laptop and placed his hands on the keyboard. He then began to fill in the contents for his thesis.

He already wrote the outline of the thesis a month ago.

Right now, he only had to modify the mathematical model and fill in the new content.

This work was boring compared to the simulating research work.

If it wasn't so difficult, he would have asked his student to write it for him.

"If only I had an assistant…"

Lu Zhou spent the entire morning writing ten pages before he leaned back on his chair and stretched his shoulders.

He was about to make a cup of coffee when he suddenly received a notification.

Xiao Ai: [Master, you have mail!]

Mail?

Lu Zhou opened his email.

When he saw the title, he was intrigued.

He didn’t expect to receive an email from Professor Stanley.

[

Dear Professor Lu, how are you?

The last time I chatted with you at the Organic Chemistry Conference, I was quite inspired by your research.

Thanks to you, we were able to make a major breakthrough in the field of the lithium-sulfur batteries. You will soon see our thesis on JACS

To celebrate this great moment, this evening, at the Ritz-Carlton Hotel, Manhattan, New York, there will a banquet hosted by ExxonMobil. Many well-known scholars and entrepreneurs in the industry will attend this party.

We will show our new technology at the end of the banquet.

If you are interested, you are welcome to come.

I will introduce you to some interesting people who might be useful for your next research project.

]

Once Lu Zhou had read the email, he shook his head.

He could smell the humble bragging coming through the screen.

Maybe Professor Stanley hoped that he would lash out at the banquet and embarrass himself?

Obviously, Professor Stanley was wrong.

A “good idea” was only 1% of the product.

The other 99% was in patents…

Lu Zhou deleted the email and closed the browser.

Although he would be happy to congratulate Professor Stanley, he had another party waiting for him.

To celebrate this hard-won victory, David Shaw decided to invite all the engineers and researchers at the institute to the Hilton Hotel.

Lu Zhou would much rather celebrate with his comrades.

“Xiao Ai, help me reply to the email, just refuse the invitation,” Lu Zhou said while he continued to type out his thesis.

Xiao Ai: [Okay, master, I got this!]

Oh?

There are improvements, it knows how to write emails now.

Lu Zhou was surprised at Xiao Ai’s reply.

He clearly remembered that this thing couldn’t even write his award-winning speech.

Lu Zhou decided to give Xiao Ai a chance.

“Okay then, take care of it.”