**Scholar 351**

Chapter 351

This thesis was published in JACS and was promoted by ExxonMobil. The entire academic community focused on Professor Stanley and his thesis.

There were several other Chinese research and development teams that were also researching the shuttle effect.

Especially for the companies that invested in the research projects, they had already cut their investments by half.

Research teams were facing the risk of being divested.

In contrast, Wang Haifeng was quite lucky.

His research grant was from the National Research Fund.

The National Research Fund didn't care as much about profits and were less prone to changes in the market.

At the very least, they didn't give up on research projects halfway through.

In any case, ExxonMobil had set up patent barriers on lithium-sulfur batteries and had full pricing power control on lithium-sulfur battery cathode materials. This was bad news for the global energy industry.

Wang Haifeng felt sorry for domestic energy companies, but he also felt a sense of comfort.

As for why he felt a sense of comfort…

The reason was that Lu Zhou wasn't the one that won the lithium-sulfur battery battle.

After all, Professor Stanley was a big name in the lithium battery industry. Professor Stanley was the one that created the earliest lithium battery model, so losing to him wasn't a disgrace.

However, if Wang Haifeng had lost to Lu Zhou, he would feel extremely embarrassed.

Professor Wang finished his lecture and was about to walk to the laboratory building.

Suddenly, a man in a suit and his assistant greeted him.

Wang Haifeng looked at the stranger and asked, "Who are you?"

The man in the suit had a friendly smile as he handed Wang Haifeng his business card.

"Hello, I am a reporter for the Science Magazine, you can call me Xiao Li."

"Magazine reporter?" Wang Haifeng frowned and asked, "What do you want?"

Xiao Li said, "Here's the case. I have learned from many sources that you are a big name in the battery industry. I want to ask you some battery-related questions, are you free right now?"

Wang Haifeng didn't want to do any interviews, but he was happy to be called a "big name".

"I am busy, I can only give you ten minutes. Just ask any questions you want."

"Okay, Professor Wang." Xiao Li smiled and signaled his assistant to record the conversation before he asked, "What do you think about the recent JACS thesis by Professor Stanley?"

Wang Haifeng said, "The academic community hasn't come up with a conclusion yet. However, the author is Professor Stanley, and he is quite reputable in academia."

Xiao Li asked, “Then, do you think the caged carbon molecule is more applicable than Lu Zhou’s HCS-1?”

“HCS-1?” Wang Haifeng laughed and said, “The two are not comparable at all. If the carbon molecule is a light bulb, then the HCS-1 would be a candle. That’s how big the difference is.”

Wang Haifeng wanted to laugh.

Why would anyone trust in a twenty-something-year-old professor?

Lu Zhou lost in the end.

Xiao Li asked, “Don’t you think this is a big exaggeration?”

Wang Haifeng said without hesitation, “Not at all, in fact, it’s conservative. You’re not in the field, so you don’t know much about the material science industry. The materials science industry produces amazing results every once in a while, but less than 10% of these research results have an industrial application uses. The HCS-1 material is an in-progress achievement and is a good result, from an academic point of view. However, this technology is worthless on the market. Do you think anyone is interested in his patent?”

Xiao Li nodded and said, “How can you be sure that Professor Stanley’s caged carbon molecules are applicable in the real world? Did you look at the thesis data?”

“The focus is not on the thesis, it’s on ExxonMobil. They’re an international giant that strives for success, and there is a reason that they funded this research.”

Wang Haifeng then said with emotion, “I have to say that the hollow carbon spheres are a good research direction; many research teams including my own are researching toward this direction.

“I believe that Professor Lu made a mistake talking about his ideas in that meeting. He should have kept his optimistic views on carbon spheres to himself. This way, no one would have copied his ideas.

“But I understand. He’s a young man, he’s full of energy. Maybe he’ll become more rational when he grows up.”

Professor Wang looked sad when speaking.

It was almost like ExxonMobil had won because Lu Zhou spilled the beans.

But actually, the fault wasn’t on Lu Zhou.

Before that meeting, there weren’t many research teams that focused on carbon nanospheres.

This included Wang Haifeng himself. Although he knew about hollow carbon spheres for a long time, he had never done any experiments in this area.

Also, it was the meeting organizers that published the content of the meeting, not Lu Zhou.

However, Lu Zhou was still the one that said the words.

Xiao Li’s eyes lit up. He could sense a story from Wang Haifeng, and he immediately asked, “What do you think of Professor Lu?”

Wang Haifeng smiled and said, “He’s talented in scientific research, but he doesn’t look at the whole situation, so it is quite embarrassing.”

Xiao Li asked, “Why do you say that?”

Professor Wang laughed and said, “Look at the Jinling Institute Computational Materials, hundreds of millions have been invested in that institute, but what results have they produced?”

Wang Haifeng wasn't afraid to speak his mind.

After all, everyone was aware of the limited application use of HCS-1…

Wang Haifeng successfully finessed the reporter, and he felt extremely satisfied.

He returned to his laboratory and sat on his chair.

Suddenly, his assistant walked into the laboratory holding a journal magazine.

"Professor, this is the new Science journal. You told me to give this to you, so I'll put it here."

"Yes, just put it here." Wang Haifeng noticed that his assistant looked weird, so he asked, "What's wrong with you?"

"Nothing." The assistant smiled and placed the journal on the table before he walked away.

Wang Haifeng sensed something was wrong. He reached out and picked up the new Science journal.

He was about to flip the page, but his hands suddenly froze.

He stopped breathing as he was rooted there like a statue.

On the cover of the Science journal, there was a line of text regarding the "highlights" section.

This was Wang Haifeng's worst nightmare…

[HCS-2 Material: Terminator of the Shuttle Effect]

Chapter 352

The latest issue of the Science journal as well as an experiment report was on the table.

Professor Stanley sat in front of the desk.

He looked muddled and in disbelief.

Woods looked at the experiment report and sighed. “We lost.”

Professor Stanley’s lips moved as if he wanted to say something. However, he didn’t speak.

He received the latest issue of the journal three days ago.

He couldn’t believe that Lu Zhou could produce such a great research result in such a short amount of time.

Especially the data in the experiment, it was like the data was faked.

Like Professor Bawendi, he repeated the experiment.

The results were perfect enough to make him hopeless.

Although there were some fluctuations in the data due to the differences in chemicals and equipment used, the general outcome of the experiment was consistent with Lu Zhou’s thesis data…

What was the premise of science?

Repeatability.

What made something industrially applicable?

Able to produce stable outputs.

There was no doubt that once the HCS-2 met these two requirements, the market would undoubtedly prefer the HCS-2 material.

Professor Stanley couldn't help but look bitter.

His experiments couldn't be repeated; this was his weakness.

Although he had been trying to remedy his results, the academic community and market were becoming impatient. Since the HCS-2 material came out, major energy companies had already begun to design lithium-sulfur batteries in accordance with the standards of the HCS-2 material.

It seemed that his attempts to remedy it were too late…

However, Professor Stanley still couldn't bear losing six months of his efforts.

He couldn't help but speak, "Give me half a year! I promise I can come up with a solution."

"There's no point, my dear Professor Stanley." Woods said, "Unless you can do better than him, what is the point? Also…"

Woods paused for a moment before continuing, "Also, HCS-3 or even HCS-4 might have come out by the time your research results are out."

Professor Stanley opened his mouth and couldn't speak.

Woods didn't say anything. He merely patted Stanley's shoulder and left.

The birth of the HCS-2 material caused an earthquake in the energy industry.

After the lithium dendrites problem was solved, the market went back to traditional lithium batteries, and these were seen in phones and laptops.

Many people were looking forward to what lithium-sulfur batteries could bring.

And now, this dream could become a reality.

Many OEM manufacturers that helped 3C electronics had completed the transformation of the production line and adjusted the production capacity of lithium-ion batteries into lithium batteries. They had to continue to design new capacity adjustment plans and start preparing to embrace the new era of lithium-sulfur batteries…

…

The most fortunate thing about Lu Zhou's thesis publication was that he didn't have to deal with patent licensing and pricing problems anymore. They were all handled by the management at Star Sky Technology.

Otherwise, Lu Zhou would have to deal with all kinds of patent inquire calls…

On a sunny morning, at Lake Carnegie near the Princeton campus, a small drone flew past the kayaking team.

The kayakers cheered and whistled as the small drone hovered around Lake Carnegie before it flew back to the park and landed on the grass.

There were several students sitting on the park bench, and all of them were looking at the computer screen.

"Oh, Jesus, what did we get?"

“Christine didn’t wear a bra!”

“This is huge…”

“Oh, send me a copy of the photo.”

Obviously, these guys were up to no good taking photos near Lake Carnegie.

Lu Zhou stood next to them, and he warned the group of boys.

“Jimmy, I promised to be your technical consultant to help you win the competition, I didn’t promise to help you to infringe on other’s privacy.”

“Sorry, professor, I will delete the photo.” The guy with a face full of freckles lowered his head and deleted all of the photos in front of Lu Zhou.

Although it would be cool to share the photos on social media, it wouldn’t be fun for the victims in the photographs.

Jimmy was the group leader, so he had to be responsible for his friends.

Lu Zhou made sure the photos were deleted before he looked at his watch. He then said, “Flight time was 30 minutes, look at the remaining battery.”

Jimmy placed his laptop aside and got up from the park bench.

“Okay, professor, I’ll go right now.”

Lu Zhou said, “Call me coach.”

“Okay, coach!”

Jimmy stood up straight and was laughed at by his friends. He then walked over to the drone sitting on the grass.

It was already summer, so it wasn’t just football competitions anymore, there were a variety of other interesting competitions.

For example, the drone design competition was one of them. This was a popular competition among American universities; it was just like the robot and artificial intelligence competitions.

Although the engineering department at Princeton was nothing special, these engineering students were still very capable. They made the drones themselves and purchased the materials online or from the professors’ laboratories.

Lu Zhou was the consultant and also participated in the creation of this drone.

It was quite a coincidence that Lu Zhou became a consultant for these students.

These students originally went to Professor Chiric to ask about the battery of the drone and how to increase the battery performance. Professor Chiric immediately recommended Lu Zhou to them.

Fortunately, Lu Zhou had just finished his experiments and had a lot of samples left over. He used equipment from the Frick Chemistry Laboratory and helped the boys to replace the positive electrode material in the battery.

Although this kind of DIY process couldn’t match industry standards, it was considered high tech among college students.

It more than doubled the battery performance of the drone.

This project was very interesting; it was like a new world was opened to Lu Zhou when he saw his research result flying in the sky.

Compared to football and rugby, Lu Zhou felt like this kind of intellectual hobby was more suitable for him.

Then, because Lu Zhou was very interested in technical problems, he gained a lot of inspiration from talking with the students. Therefore, he accepted their invitation and became their club consultant.

Because of this, he gained another title: Chief Consultant of the Princeton University Drone Club.

Of course, even though he was a consultant, he didn't actually have to do much work. The students knew that he was busy and didn't bother him much.

At most, Lu Zhou would spend a few hours on the weekends to discuss some technical problems with them and watch them fly the drone.

While Lu Zhou was watching the students flying the drone, a woman with blonde hair and dressed in business attire walked to the park.

She had an assistant and photographer following her. Obviously, she was not from the university.

Lu Zhou noticed this woman walking toward him, and he asked, "Who are you?"

The lady smiled and handed him her business card.

"Hello, Professor Lu, I am a reporter from the Times Magazine, are you free right now?"

Chapter 353

Julia turned on the recorder and asked the first question.

“Most people know you from the Goldbach’s conjecture and Crafoord Prize, and they think of you as a mathematician. Can I ask what made you interested in the chemistry industry?”

The first question was very interesting. Lu Zhou thought about it seriously for a moment before he came up with an answer.

“The public likes to label a person based on their limited knowledge. In fact, this labeling is often biased and one-sided. The more cutting-edge the research is, the more difficult it is to classify a problem.

“For example, my research on modified PDMS film was undoubtedly a materials science problem, but it was also an organic chemistry problem. It involved the analysis of the physical and chemical properties of the material, so it was also related to condensed matter physics. Personally, I used a computational model myself, so it could also be classified as a mathematics problem.”

Julia asked, “Why battery then?”

Lu Zhou smiled and said, “Probably because my phone is often out of battery at important times, so I want the battery to last longer?”

Julia was unsatisfied at this answer.

She asked, “Is this the real reason?”

Lu Zhou said, “If I have to give a reason, this is the only one I can think of. In fact, most of my colleagues at the Institute of Advanced Study are engaging in research work with no specific motivation behind the research. Just like me, they are just curious and interested.”

Julia’s eyes lit up as she asked, “So, do you think interest is the best supervisor?”

Lu Zhou nodded and said, “You could say that.”

Julia looked at her notes and asked, “The next question might be a bit offensive, but do you want to talk about personal assets?”

Lu Zhou said, “It depends on the question. I hope it doesn’t involve me talking about any specific numbers…”

He wasn’t sure how much money Star Sky Technology had made for him.

After all, the string of numbers in his bank account was only a tool to help him achieve his purpose, not the purpose itself. Unless the research required a lot of investment, Lu Zhou wouldn’t pay attention to the finances.

Julia smiled and said, “No worries, I won’t ask about that.”

She continued to speak, “Star Sky Technology has made hundreds of millions off your modified PDMS patent. Lithium-sulfur batteries could also be hugely profitable for you.

“There is no doubt that you are living a life that all researchers are envious of. You can research any topic you wish without constraints. Most people describe your career as successful, but what do you think of your career?”

This question wasn’t easy to answer, and Lu Zhou had to think for a long time.

After a while, he finally answered.

“I enjoy the fun that science brings me more than the money. As for the numbers in the bank account… They are useful of course. As per what you said, I can research anything I want without having to think of the economic, culture, and politics.”

“As for the success,” Lu Zhou smiled and said, “I think science is endless. But I don’t think I deserve this evaluation.”

The interview took about 20 minutes. Julia asked him other questions about life, research, and working as a professor. Lu Zhou responded selectively.

At the end of the interview, Julia asked one last question, “Can I ask about your future plans?”

“Future…” Lu Zhou looked up and thought for a bit before he said, “Maybe physics.”

Julia asked, “Physics?”

“That’s right,” Lu Zhou said with a nod. He then continued, “Theoretical physics has always been an area of interest for me. I think this field is closely related to mathematics. In fact, I have done quite a lot of research in this area, and most importantly, there is still a physics problem that troubles me.”

It was about the 750 GeV signal.

Although the mainstream opinion was that this was just a coincidence, Lu Zhou believed that mathematics wouldn’t lie.

There was an amazing secret behind the signal.

Julia smiled and said, “This is a bold decision. I wish you success. Also, there is one more favor I have to ask.”

Lu Zhou said, “What?”

“If you don’t mind, I want to take a photo of you for the next cover of Times Magazine. But not here. Do you have time tomorrow?”

Oh, this is what you want?

Easy.

Lu Zhou smiled and nodded.

“Sure.”

Lu Zhou had always been confident about his looks.

He agreed to a time and place for the photoshoot before Julia left with her assistant and photographer.

As per what she said, this interview didn’t take long.

The club members saw that the interviewer had left, and they came over.

Jimmy was the first to speak and this freckled boy asked, “Coach… who were those people?”

Lu Zhou said, “Reporters.”

A Mexican guy asked, “Are you going on the news?”

“I guess.” Lu Zhou looked at the club members who were worshiping him and said, “Work hard, if you win the championship, I’m sure a lot of people will want to interview you.”

The Mexican dude asked, “Can I ask which TV station those reporters were from?”

“Not a TV station…” Lu Zhou said. In fact, he was also surprised why there was a photographer.

Was it for capturing photos?

The crowd quieted down after hearing it wasn’t a TV station.

They lost their interest.

It turned out that Lu Zhou wasn't going on TV.

Lu Zhou added another sentence.

"It's just Times Magazine."

Everyone: "…"

People were speechless at how nonchalantly Lu Zhou spoke.

Finally, Jimmy was the one to speak first.

The kid quietly whispered, "… Times Magazine would never interview a drone competition winner."

Everyone in the Princeton Drone Club agreed.

Their consultant was great; the only downside was that Lu Zhou humble bragged too much.

They were muddled.

Lu Zhou smiled and didn't reply to Jimmy. Instead, he clapped his hands and changed the topic.

"Stop wasting time, hurry up and train. This is probably my last session with you guys before the competition."

Jimmy asked, "Coach, are you busy next week?"

Lu Zhou nodded.

“I will go to Germany for a while next week. It might take a week or two, or it might take a month. If you need to use the equipment in the laboratory, you can ask Connie.”

Lu Zhou patted the young man on the shoulder as he said, “I hope that the next time I come back, I will be standing among winners.”

Chapter 354

He then suddenly saw the magazine at the airport while waiting for the plane to depart.

Although he didn’t really care about the public’s opinion on him, he was still curious about what the world-class magazine said.

Lu Zhou flipped through the pages and read the text.

[… Three years ago, he didn’t have any research results, nor did he have a single medal, nor were there people visiting the Jin Ling University library like a shrine, sitting in his old seat while hoping to gain inspiration.

[But three years later, not only did he have all of this, but he also used mathematics to create a different world for everyone.

[When he stood on the stage of the Stockholm Concert Hall and received the Crafoord Prize, not only did he receive recognition from the Royal Swedish Academy of Sciences but also from the entire world. The Goldbach’s conjecture was finally solved.

[Today, his new achievements in the field of lithium-sulfur batteries have changed the energy industry. Any consumer that uses electronic devices is directly affected by his research.

[Very few scholars are able to achieve this much at such a young age, and even fewer are able to avoid the obsession with money and fame while maintaining their excellence in climbing the mountain of science.

[After all, going into unknown territory required more than just courage.

[Recently, he was invited by the Max Planck Institute to travel to Europe to attend a conference. He will present his latest research findings to the academic community on the theoretical model of the electrochemical interface structure.

[As he promised, he would redefine science with mathematics. He will attempt to fulfill his original promise.

[He isn't just a person but a symbol.

[The symbol of the new generation of scholars.

[This new generation of scholars will shape our future.

[Times Magazine 21/8/2018.

-Julia Drake]

Lu Zhou looked at the international issue of Times Magazine in his hand and smirked.

Times didn't evaluate every interviewee positively, and they often published satirical and criticizing content. However, there was no doubt that this article about him was positive.

And obviously, Lu Zhou was most satisfied at the photo of himself on the cover.

The series of spell-like formulas and letters on the blackboard, and the books and documents that piled up at the corner of the table; they all portrayed his identity as a mathematician. He wasn't portrayed as a nerd at all.

He was wearing his favorite plaid T-shirt, and he looked like an ordinary college student instead of a professor.

He was holding a piece of chalk in his right hand and “Little Guy” from the Princeton Drone Club on his left arm.

Yes, the name of the four-rotor drone was “Little Guy”.

Perhaps the Times Magazine wanted to use the four rotors to symbolize his never-ending thinking process.

Of course, Lu Zhou felt like all of this could be symbolized into one word.

Anyone that looked at this photo would know the word.

Handsome.

…

After a few hours of flying, a bright silver airplane landed at the Tegal Airport in Berlin.

Soon after Lu Zhou got off the plane, he received a warm welcome.

He saw a gray-haired old man extending his right hand and walking toward him with a smile.

“Hello, Mr. Lu Zhou, welcome to Berlin.”

Lu Zhou let go of his suitcase and shook hands with the old man.

“Hello!”

Even though Lu Zhou didn't speak German, they could still communicate in English.

After some small talk, the old man introduced Lu Zhou to several scholars standing behind him.

"Please allow me to introduce myself, I am the president of the Max Planck Institute, Martin Stratmann." Stratmann then looked at the person next to him and said, "This is Professor Klaus von Klitzing…"

Although this was their first time meeting, Lu Zhou knew who Stratmann was.

He served as the president of the Max Planck Institute and the director of the famous Max Planck Institute of Steel Research; he was an expert in surface chemistry.

The Kelvin scanning probe he invented was widely used to study the hidden secrets in corrosion science such as revealing the stability mechanism of the metal-polymer interface.

Lu Zhou had read his thesis when he was studying computational materials science in the library.

As for Professor Klitzing, he had countless achievements. Whether it was in theoretical physics or condensed matter physics, his name was everywhere.

His most famous research result was the quantum Hall effect which won him the 1985 Nobel Prize.

In addition to Klitzing, the director of the Max Planck Institute for Physical Chemistry and Professor Faltings were also there.

Faltings hadn't changed since Lu Zhou met him last year. The old German man still had a temper.

"Hello."

“Hello.”

“We meet again.”

“… Yeah, we do.”

Lu Zhou thought that Faltings would be more welcoming to him since they had met before.

Since the old man came all the way to pick up him, this had to be Falting’s unique way of expressing recognition.

After all, there weren’t many people that were worthy of Falting’s recognition.

The old man respected less than a handful of mathematicians in the world.

Lu Zhou thought that his theory was quite reasonable.

Chapter 355

“You’re an absolute genius, how did you come up with the formulas?” Professor Ertl said while sitting in the special Max Planck Institute car.

Lu Zhou said in a joking tone, “You might not believe it, but the Schrodinger equation gave me a lot of inspiration.”

Klitzing smiled and said, “This isn’t unbelievable. HF methods and molecular dynamics simulations have a lot to do with quantum mechanics.”

Professor Ertl continued to ask, “I’ve read your thesis. Although I don’t understand some of the theories, I still have doubts about the parts I do understand. How do you accurately simplify the solution of the multi-body ground state to the ground state density? What is the difference between the theory and the first principle calculation method if it is passed through the Schrodinger equation?”

The first principle calculation method was the core method of modern computational chemistry, and the source of the theory was the Schrodinger equation in quantum mechanics. This kind of calculation method had some issues.

First of all, the number of variables reached 3N (N being the number of total particles), and this astronomical number resulted in controversy.

It wasn't just because the number of variables was so large. In order to make the theory more "presentable", the empirical parameters were also horrendous.

"Yes, but not entirely," Lu Zhou replied. He then smiled and said, "I introduced the concept of partial functional density theory in the ground state density distribution problem. For example, taking the radius of the designated core atom as RA, the chopping function outside the truncation radius is the same as the real valence electron wave function ψv, thus obtaining…"

"Let's talk about the specifics in a week," Stratmann said as he was already confused. He looked at Lu Zhou and asked, "What do you plan to do this week?"

Lu Zhou didn't have access to a blackboard, so it was difficult to explain in detail.

Lu Zhou thought for a moment before saying, "Before the report, I want to become familiar with the environment around here. Is there any interesting places that you would recommend?"

Professor Klitzing was suddenly interested, and he said, "Places? There isn't a more interesting place than the laboratories at the Max Plank Institute, do you want me to take you there?"

Lu Zhou immediately replied, "Please do."

Compared to the landmarks of the Brandenburg Gate and the Houses of Parliament, Lu Zhou was still more interested in laboratories. In particular, the laboratories of the Max Planck Institute were famous in the condensed matter physics field.

Plus Lu Zhou had a Nobel Prize winner as his tour guide.

After a half an hour drive, they arrived at their destination.

Lu Zhou took out his suitcase from the trunk in front of the Pegnitz Hotel.

He was about to bid farewell to the scholars when he suddenly remembered something.

“Oh yeah, I have always wanted to ask something.”

Professor Klitzing said, “Go ahead.”

Lu Zhou smiled and said, “This question might be a bit boring. Just out of curiosity, why was my invitation letter from the condensed matter physics institute instead of the chemistry institute?”

Lu Zhou would understand if it came from the mathematics institute but from the condensed matter physics institute… Although it wasn’t completely unrelated to his research, he was still confused.

Suddenly, there was an awkward tension in the air.

Especially Professor Ertl and Professor Faltings.

Lu Zhou suddenly realized that he shouldn’t have asked this question.

Professor Klitzing looked somewhat proud as he cleared his throat and speak, “Good question…”

However, Faltings interrupted him.

“This is a boring question.” Faltings looked like he didn’t care when he said, “Also, next time I’ll play Blackjack instead of flipping a coin.”

Lu Zhou: "…"

Lu Zhou kind of knew what was going on…

…

The predecessor of the Max Planck Institute was the Royal Society of Williams which was founded in 1911. Emperor Williams II believed that interest in science and technology could enhance the country's strength, so he established the society in his own name.The royal family funded the research to strengthen Germany's scientific research community.

This decision was undoubtedly wise. Due to the support from the state, a large number of outstanding scholars and scientific research projects were created. Within 30 years, German technology was the best in the world.

After World War II, although the Royal Society of Williams was disbanded, it was retained due to support from the United Kingdom Max Planck Institute.

The impact of this historical heritage could be seen today.

Although the academic community had been leaning toward America ever since the Cold War, the Max Planck Institute had always been the world-leading institute on condensed matter physics.

From this aspect, the Germans were undoubtedly more fortunate than the French who had lost their status as the world's mathematical center.

Lu Zhou spent a day resting in his hotel room. On the second day, he went to one of the Max Planck Institute laboratories.

Strictly speaking, the laboratory was also a legacy of the Royal Society of Williams, but it was unrecognizable after the modern renovations.

"… The laboratories of the Max Planck Institute are located in various cities in Germany. This is only one of them, but it is the largest. Many chemistry and physics projects are done here."

Lu Zhou said, "So the research projects here are determined by the research institute?"

Professor Klitzing said, "Not exactly. Strictly speaking, most of the projects here are done by research groups. There is a big difference between the research groups. We use a different research method compared to American research institutes."

Professor Klitzing walked along the tree-lined path leading to the condensed matter physics laboratory while talking to Lu Zhou about the internal organization structure of the Max Planck Institute.

They walked past a round-shaped building when Lu Zhou asked, "What is that?"

Professor Klitzing smiled and said, "That is the Institute of Plasma Physics, I bet you can't guess what's inside."

"Is it a collider?" Lu Zhou joked.

"Haha, nope. It's more fictional than a collider," Professor Klitzing joked. He then said, "You might have heard of it before, controllable nuclear fusion is an interesting topic."

Chapter 356

Professor Klitzing noticed Lu Zhou's confusion and smiled as he said, "There's no secret here. You can retrieve the papers from the Firestone Library. The access restrictions are mainly to prevent troublemakers from coming in. The security in Berlin has gotten worse recently."

Lu Zhou joked, "I thought it was some highly confidential place."

Professor Klitzing smiled and said, "Don't worry, even I wouldn't be able to access a place like that."

Contrary to popular conspiracy theories about nuclear fusion technology, most countries had done research in controlled nuclear fusion but the research results were open to the public.

According to the ITER agreement signed in Paris in November 2006, the national research teams of each country would report their latest research progress at each International Fusion Energy Conference.

The reason for cooperation was simple.

It was because the difficulty of this project had far exceeded any research project. It was more difficult than the Manhattan Project, Human Genome Project, and the Apollo Project. Also, controllable nuclear fusion technology could not be achieved by one country alone.

Due to these circumstances, the benefits of closed-door research were far outweighed by the benefits of participating in the ITER program.

For example, the Experimental Advanced Superconducting Tokamak (EAST), played a pivotal role in the ITER project.

As for how the benefits of the project would be distributed, that would be an issue for later. Right now, they couldn't even figure out what the problem was much less how to solve it.

Whether it was the tokamak or stellarator, there was no secret design theory. This was why Professor Klitzing could bring Lu Zhou for a visit.

The only secret part was the laser fusion that was used for "ignition".

One of the main functions of laser fusion was to simulate a hydrogen bomb explosion. Therefore, ITER didn't cooperate with countries that didn't sign the nuclear peace treaty.

However, this secret part of the research couldn't be seen. Confidential research was obviously done in a confidential place.

Lu Zhou followed Professor Klitzing all the way to the core area of the building. He looked at the strange object sitting in open space and said, "This looks like a fried dough twist."

The “dough twist” was connected seamlessly from end to end, forming a circle.

From a geometry perspective, it was a Mobius ring transformed into three dimensions.

The plasma could operate stably in the circular orbit that was wounded by a coil.

In contrast, the tokamak device relied on the magnetic field generated by the external magnetic field and the plasma current. If the plasma became unstable or disturbed due to some unknown physical phenomenon, the entire system would be at risk of collapsing.

It was also theoretically possible to control the ignition of the stellarator more easily than the tokamak.

However, although the stellarator had many advantages, it had one deadly disadvantage. That was, the technology requirements were extremely demanding, and the equipment engineering process was complicated.

The weird-looking object in front of Lu Zhou was already complicated enough, and it was only one of the parts required for nuclear fusion. Not to mention, there were only a handful of countries that possessed this part.

This was one of the reasons why China chose the tokamak route instead.

Professor Klitzing jokingly said, “Really? I think it’s more like a donut with cream.”

Lu Zhou looked at the old man. He clearly didn’t understand what a “fried dough twist” was.

“This is the plasma orbit that was replaced by the spiral stone 7-X,” Professor Klitzing said while looking at the device in front of him. He continued, “As for the complete spiral stone 7-X, it is in Greifswald. If you are interested, I can take you there after the report is over. They are doing an experiment there right now.”

Lu Zhou smiled and said, “Really? I’ll remember your words.”

This was a good opportunity.

Although controlled nuclear fusion was outside of Lu Zhou’s research area, he was interested in any sci-fi like technologies.

However, no matter how interesting the experiment was, it wasn’t as important as his report.

After Lu Zhou’s visit at the Max Planck Laboratory, he returned to the Pegnitz Hotel and began preparing for his upcoming report.

Days flew by and it was soon the report day.

The report would be held at Humboldt University.

Lu Zhou woke up early on Saturday and arrived at the venue an hour earlier.

The venue was almost full of people when he arrived.

The Max Planck Institute didn’t have restrictions on participants; they only pre-allocated seats for important participants. Therefore, many scholars, students, and professors from major universities and research institutes also joined in on the fun.

It was less than half an hour until the report began; some people even sat on the corridor.

The theoretical chemistry community had been waiting for this report for two months.

They were wondering if this could mean a new generation of chemistry…

Everyone looked at the big screen behind the podium while they waited to witness this historic moment.

President Stratmann stood next to the podium and saw the people sitting on the ground. He told the venue staff members to find some chairs and place them inside the venue.

He then looked at Lu Zhou who was copying data onto the projector.

“How’s the preparation going?”

Lu Zhou said in a relaxed manner, “Basically, pretty good.”

“You got this,” Stratmann said as he gave Lu Zhou a thumbs up. He then added, “I hope everyone will get to witness history today.”

Lu Zhou smiled and adjusted his tie.

“Definitely.”

Chapter 357

“Come on…

“Let me see how you defeated me.”

Professor Stanley’s lips trembled as he stared at the projector screen.

He whispered to himself, “Let me see what you were really researching…”

Finally, it was ten o’clock.

The whispers that filled the venue disappeared.

It was like they were silenced by some mysterious power.

No one had to maintain the orderliness of the venue; no one had to announce the beginning of the report.

Because suddenly, the PowerPoint turned to the first page, showing the title.

[Theoretical Model of the Electrochemical Interface Structure]

Lu Zhou looked at the crowd and adjusted the microphone. He then cleared his throat and spoke.

“The theoretical model of the electrochemical interface structure has been a problem in the theoretical chemistry community for many years.

“Unless we understand the nature of the interface, we cannot thoroughly clarify the microscopic essence of various electrochemical processes.

“From a mathematical point of view, I tried to establish a theoretical model from the collected data and observed phenomena. This mathematical model has been tested on the Anton supercomputer.

“Now, I will elaborate on the theoretical model I proposed.

“If there are mistakes, I hope I can be corrected.”

Lu Zhou spoke slowly.

He continued his speech.

He had been preparing for this report for two months.

When he was designing the PowerPoint, not only did he elaborate on the difficult parts of the theoretical model, but he also explained the complicated theory in a language that made it as simple as possible.

Of course, he didn't over-simplify the theory itself.

The reason for an academic conference was to spread knowledge. However, the academic report wasn't for the public. It wasn't Lu Zhou's responsibility to make other people understand his report.

There was no room for compromise.

Everyone in the venue listened intently.

Although they couldn't understand everything, no one wanted to miss any details.

Missing one detail could mean everything.

"All of the ground state properties of multi-particle systems are the only density functions. With this, we can calculate the total energy of multi-particle systems as the sum of kinetic energy, general coulomb energy, and multi-body effects…

"All of these three energy values can be calculated."

While speaking, Lu Zhou used a marker to write on a whiteboard.

Part of the theorem was derived by the Hohenberg-Kohn theorem, it wasn't particularly difficult.

The next part was the calculations, which was the main part of the theoretical model.

There were more and more equations appearing on the whiteboard. Many people were lost as they were unable to keep up with Lu Zhou's speed.

Professor Stanley stared at the whiteboard and muttered to himself, "What is he writing?"

Even though Stanley did his homework and read the thesis many times, he still couldn't understand the report.

However, he was still an outstanding scholar.

Although he was far from a Nobel Prize, he was still much stronger than the average scholar.

Professor Stanley gently tapped his pen on his laptop.

Suddenly, his brain made a connection…

What connection?

He didn't know either.

He couldn't understand the connection…

Some of the audience was becoming more and more focused on the talk.

Professor Ertl was one of them.

As a Nobel Prize winner, he had a deep understanding of computational chemistry.

Although he had many questions about Lu Zhou's theoretical model, most of the questions were from the mathematical side.

But now, Lu Zhou's detailed explanation laid out every formula and derivation.

His original doubts had disappeared.

Lu Zhou's voice echoed through the quiet venue.

Time quickly flew by.

Without knowing it, Lu Zhou had already filled five whiteboards. He turned his attention to the next one and began writing.

Lu Zhou finished writing on the sixth whiteboard and took two steps back.

"Using this theorem, the result is obvious…"

He looked at the six whiteboards and suddenly stopped talking. He started to think.

The venue was dead silent while everyone looked at him.

A minute passed.

This minute felt like an hour.

Professor Ertl looked at the lines of calculations on the whiteboard and said, "No doubt…"

President Stratmann immediately said, "No doubt what?"

Ertl suddenly smiled and put down his pen.

“There is no doubt that this is a new generation of chemistry.”

Professor Stanley, who was sitting at the corner of the venue, took off his glasses and frowned.

Undoubtedly.

He had lost.

A complete defeat…

He wasn’t even worthy to be his opponent.

However, Professor Stanley felt relief.

His question was finally answered…

There was a commotion in the crowd.

More and more people began to understand the theoretical model.

At last, Lu Zhou came back to life.

He smiled at the whiteboards.

He then turned around and gently placed the marker down on the podium.

Finally, he made an announcement.

“… As you can see, our conclusion is correct!”

The moment he finished his announcement, the venue was filled with thunderous applause.

Applause of approval.

Applause of celebration.

They were also applauding this historic moment…

Chapter 358

At backstage, Professor Ertl walked toward Lu Zhou, and he spoke in a serious tone, “Whether the Nobel Prize committee agrees with your theory or not, I will recommend you to the Royal Swedish Academy of Sciences.”

Lu Zhou smiled. “Thank you.”

“You’re welcome.” Professor Ertl smiled at Lu Zhou and said, “We’re the ones that should be saying thank you. Thank you for bringing this report to Berlin. We haven’t seen such an amazing report in a while. Although I can’t guarantee that you will win the Nobel Prize, I think that you are worthy of nomination.”

According to the Nobel Prize selection rules, former Nobel Prize winners were allowed to recommend candidates.

However, this was nothing to get excited about. Every year there were thousands of recommended candidates, but after two rounds of screening, there would only be one Nobel Prize winner.

Usually, the referee names couldn’t be disclosed, and the nomination information was confidential for 50 years.

But the rule wasn’t enforced in the initial recommendation stage.

Nobel Prize winner would often joke that they “recommended you to the Royal Swedish Academy of Sciences”. This would cause stress on the potential nominee until the results were revealed in October.

Of course, this didn’t apply to the Nobel Peace Prize and Nobel Prize in Literature.

Even gambling companies could guess the list of nominees in advance and announce the list.

Lu Zhou joked, “You shouldn’t tell me, you’ll ruin the surprise.”

Ertl laughed and said, “Only a nomination, don’t get too excited. It’ll be lucky if you can win the prize by my age.”

Lu Zhou made a helpless expression.

“That’s… a bit sad.”

It wasn’t realistic to win a Nobel Prize by creating a theoretical model.

But Lu Zhou still felt like he wouldn’t take that long…

…

Lu Zhou wasn’t worried about the Nobel Prize, nor was he anxious about Professor Ertl’s recommendation.

He felt like the medal was an endorsement of his research, but it didn’t give him motivation.

He was still young.

He just had to do his own research. He’ll get what he deserved sooner or later.

Regardless of how Lu Zhou thought about the medal, the entire theoretical chemistry community exploded after the report.

The response was way more intense than Lu Zhou's first JACS thesis.

Like the Millennium Prize Problems in mathematics, there were similar questions in chemistry.

However, these questions were longer than one equation. Universities were still debating about which question was more important.

However, even though there was a debate, the theoretical chemistry community had reached a general consensus.

For example, there were four major chemistry problems in the 21st century. One of them was how to establish a time-dependent quantum many-body theory.

Simplified, the problem was concerned with the calculation of the rate of chemical reactions, the route of chemical reaction, and how much catalysts were needed.

Also, how to answer similar questions using a theory.

The theoretical model of the electrochemical interface structure was one of the problems.

What this theoretical model was to the four major chemistry problems was like what the Hardy-Littlewood theorem was to Riemann's conjecture.

The Hardy-Littlewood theorem determined that the number of non-trivial zeros in a certain interval of the Riemann function was less than KT. On the other hand, the theoretical model of the electrochemical interface structure determined the "microchemistry of a certain type of reaction".

After Lu Zhou's report, the Max Plank Institute announced their support for the Theoretical Model of Electrochemical Interface Structure.

What was interesting was that after the Fritz Haber Institute of the Max Plank Society stated their opinion, Professor Martin Karplus, who previously stated his optimistic opinion about the theory on Nature, immediately published a JACS thesis.

In Karplus' thesis, he cited Lu Zhou's JACS thesis and gave a clear explanation of the zero-charge potential of polycrystalline metal electrodes from a theoretical point of view.

This was a classic electrochemistry problem.

Although the existence of "zero-charge potential of polycrystalline metal electrodes" was unquestionable, there had been no conclusion on the exact formation mechanism under microscopic conditions.

However, solving this problem with the "Theoretical Model of Electrochemical Interface Structure" wasn't difficult.

Obviously, this Nobel Prize winner already knew the potential behind this theoretical model two months ago. That was why this thesis was published in such a timely manner.

It seemed that he won.

It wasn't only Martin Karplus who was interested in this new theory.

More and more theoretical chemistry researchers showed great interest in this theory.

Compared with the inferior "Kohn-Sham method" or the "density functional theory", the Theoretical Model of Electrochemical Interface Structure was almost made for electrochemistry materials. It provided a strong foundation for the study of polymer materials as well.

Especially for PhDs in computational materials science and computational chemistry, this theory was a god's gift.

At least it gave their bosses another reason for them to stay in the research team.

While the world was debating if Lu Zhou could become the youngest Nobel Prize winner due to this theory, the German Chemical Society made a quiet decision.

In recognition of this theoretical chemistry's contribution to the chemistry society, the German Chemical Society decided to award the founder a remarkable medal…

Chapter 359

"Very few scholars can achieve such great results at this age.

"Now that the Theoretical Model of the Electrochemical Interface Structure is completed, it will allow us to achieve even greater results. I believe that this will become a cornerstone for our future theories."

Professor Klaus Mullen paused for a second before he announced the German Chemical Society's decision.

"The German Chemical Society has decided to reward Lu Zhou the great Hoffman Prize to thank him for his contribution to the theoretical chemistry community.

"Please give him a round of applause."

Thunderous applause filled the venue.

Professor Ertl was sitting in the crowd, and he gave Lu Zhou a thumbs up.

Sitting next to him was Faltings; he looked bored and couldn't help but yawn.

However, the arrogant German man still clapped his hands.

The theoretical model contained a certain amount of mathematical beauty.

This was the reason for his applause.

Faltings reluctantly admitted that mathematical part in the theory was sophisticated.

On stage.

The medal and certificates were handed to Lu Zhou as the old man smiled and reach out his hand.

“Congratulations, Professor Lu Zhou.”

The Hoffman Prize was established by the German Chemical Society in 1902. The rules were that any scholar who could make an outstanding contribution to the field of chemistry could win this medal regardless of nationality.

The prize money wasn’t a lot; it was only €10,000.

Lu Zhou was the first Chinese scholar to receive this honor; he was also the youngest.

The meaning behind the honor was even more significant due to these two factors.

Holding the medal and certificate, Lu Zhou shook Professor Mullen’s hand as he expressed his gratitude.

“Thank you.”

Professor Mullen smiled and replied, “You’re welcome, you deserve this honor.”

The award ceremony came to an end.

However, the German Chemical Society hadn't finished celebrating yet.

It was a tradition in the academic community to host a party after an award ceremony.

At night, at The Westin Grand Berlin hotel, the German Chemical Society held a banquet for Lu Zhou; all of the members of the society were invited.

In addition to celebrating the Hoffman Prize, the purpose of this party was also to provide a place for scholars to network and communicate.

As the winner of the Hoffman Prize, Lu Zhou was undoubtedly the center of attention.

Many people gave him their congratulations.

Professor Mullen was chatting with Lu Zhou, and he said, "… China is a beautiful country, I have been there many times. I've been to Shanghai Jiao Tong University the most as the library there gave me a lasting impression. It was packed full of people from opening to close. In my opinion, a nation that loves academia and knowledge is worthy of respect."

Any outstanding scholar had many identities. Other than the president of the German Chemical Society, Professor Mullen was also the dean of the German Academy of Sciences and the director of the Max Planck Institute for Polymer Research. He was also an honorary professor of Shanghai Jiao Tong University.

He spoke in a sincere manner.

Lu Zhou smiled and said, "I'm glad to hear that. If you want, you can come to visit Jin Ling University. I promise you it's a beautiful place."

"Haha, please take me there."

Professor Mullen smiled as he added, “Any place that can cultivate a scholar of your caliber is worth visiting.”

Lu Zhou toasted with Mullen. “For sure.”

Although he wasn’t sure if Professor Mullen could find any inspiration from Jin Ling University’s education model, communicating with foreign universities was always a good experience.

As a handsome alumnus, Lu Zhou felt like he should contribute something for Jin Ling University.

…

Lu Zhou drank quite a bit of alcohol at the party. Although he had a decent alcohol tolerance, he couldn’t drink anymore.

Lu Zhou took a taxi and returned to the Pegnitz Hotel. The first thing he did was to take a hot bath in the bathroom.

Once he got rid of the alcohol smell on his body, he felt a lot more comfortable.

Lu Zhou threw his clothes into the laundry and lay down in bed. He looked at the blank ceiling and played with the medal in his hand.

He suddenly felt a little lonely, so he took out his phone and spoke.

“Xiao Ai, I’m a little dizzy now, I’m going to sleep soon. I feel like I forgot about something, do you know what it is?”

Xiao Ai thought for a bit.

A line of words appeared on the screen.

Xiao Ai: [Master, I know, you forgot to celebrate with your fans!]

Lu Zhou: …?

What?

I think…

It’s right.

Lu Zhou smiled with a drunken look on his face.

This…

Isn’t good.

Although the Hoffman Prize wasn’t as popular as the Crafoord Prize, and the German Chemical Society wasn’t as strong as the American Chemical Society, the Hoffman Prize was still popular in the chemistry community.

After all, this award wasn’t given every year.

Due to the rarity of this medal, it had even more influence than the Adams Chemistry Prize.

Thinking about it this way, he should really share the joy with his fans.

Lu Zhou took a photo of the Hoffman Prize medal and certificate before he wrote a caption.

[Was just given a €10,000 prize bonus. Last time, I chose ten winners for a Huawei phone. This time, I'll choose ten iPhone winners.]

Lu Zhou hit "Send" before he threw his phone on the nightstand and went to sleep.

Chapter 360

[God Lu, are you still writing other people's theses?]

[…]

Overnight, Lu Zhou's inbox had 99+ notifications.

The comment section was blowing up.

Lu Zhou sat in the hotel restaurant and was eating breakfast. As he scrolled through his phone while looking at his fan messages, it made his breakfast even more delicious.

Suddenly, he received a call.

Lu Zhou picked up the phone and heard Principal Xu's voice.

"How is it, is there hope for a Nobel Prize?"

Lu Zhou nearly choked on his food.

"How would I know?"

Even Einstein didn't receive the Nobel Prize immediately after explaining the photoelectric effect.

The more original a theory was, the more time it would take to test its importance and value. After all, not everything was as simple as the “existence of gravitational waves”.

Principal Xu realized that he had asked a nonsense question. He smiled as he said, “This… I don’t know anything about chemistry. However, the professors from the chemistry department have a high opinion of you. They said your theory laid the foundation for computational chemistry. A few academicians agree that it is no exaggeration to say that your research deserves a Nobel Prize.”

This is not a f*cking exaggeration?

Lu Zhou replied humbly, “… That’s a bit optimistic.”

“Haha, it’s not optimistic at all, congratulations on your Hoffman Prize!” Principal Xu smiled and changed into a more serious tone as he asked, “Also, I have something to ask you, what do you think about computational chemistry?”

Lu Zhou was stunned. He thought about it for a few seconds before he replied.

“I think it is a good field, it can increase our research efficiency and decrease research costs. This is all thanks to the breakthrough in computer technology. I think that chemistry will go in the direction of physics, it will change from a purely experimental discipline to a discipline based on experiment, theory, and calculation.”

Actually, this wasn’t Lu Zhou’s own idea. The potential of computational chemistry was mentioned at the 1998 Nobel Prize in Chemistry awards ceremony.

But now, the idea became a reality. Until now, computational chemistry hadn’t received any attention.

Lu Zhou always felt like it was only a matter of time until the rise of computational chemistry.

Principal Xu smiled after hearing Lu Zhou’s answer.

“I think so too.”

Principal Xu was in computer science. He was an academician in the Ministry of Information Technology, and he had always valued Jin Ling University’s computer science department.

Now that the international theoretical chemistry community had recognized Lu Zhou’s theoretical model, the domestic debate had ended. Particularly, the success of the HCS-2 material shone a light on the future of computational chemistry. This was one of the reasons why Principal Xu wanted to develop in the area of computational chemistry.

Actually, Jin Ling University had a theoretical and computational chemistry research institute. However, it mainly did theoretical research and lacked special equipment.

Principal Xu Jian paused for a second before he said, “We plan on building a computational chemistry supercomputer center near Jin Ling University campus, what do you think?”

Lu Zhou was stunned.

“I think it’s good…”

Does Jin Ling University have this much money?

A supercomputer center wouldn’t be cheap.

When Principal Xu heard Lu Zhou’s answer, he smiled and said, “Then, can you please help us write a letter?”

Lu Zhou: “Letter?”

Principal Xu: “Yes, just talk about the application potential of computational chemistry… After all, Jin Ling University can’t afford to buy a supercomputer; we need support from the state.”

Lu Zhou suddenly realized what was happening.

So, you're asking me for this favor?

"Oh, just this? Okay," Lu Zhou said. He didn't know if he would be of any use, but he still agreed quickly. "Give me a week, I'll write a letter to you."

Principal Xu smiled and said, "Thank you so much."

If Jin Ling University built a computational chemistry supercomputer, it would be helpful for Lu Zhou's computational materials research institute. He could easily borrow the equipment.

Therefore, Lu Zhou was also helping himself.

Lu Zhou finished his breakfast and returned to his room to change his outfit.

At the party yesterday, President Hendrik Olbertz of Humboldt University gave him an invitation to give a lecture to the science students at Humboldt University.

Although he said it was a lecture for undergraduate students, before the lecture even began, a few Humboldt University professors walked into the lecture hall and sat at the back of the classroom.

They were engineering professors, which was in a different field than Lu Zhou's. They didn't expect to learn any new theory from Lu Zhou; they only wanted to learn how Princeton professors lectured.

Because of this, the professors were even prepared to take notes.

Lu Zhou looked at the crowded classroom and adjusted the microphone on the podium. He made sure everything was working normally before he looked at the clock on the wall.

It was about time, so he cleared his throat and began his speech.

This was an unexpected lecture, so Lu Zhou didn't have much time to prepare. However, that was not a big deal for him.

The lecture was about general scientific knowledge, it didn't dive deep into any specific area.

His lecture was about the connections between physics, mathematics, and chemistry. He also talked about the problems he encountered in scientific research as well as some of the research experiences he acquired.

He didn't even use a PowerPoint. With just a blackboard and chalk, Lu Zhou managed to portray his thoughts vividly.

However, there was a difference between plans and reality.

The first half of the hour was fine, but when the second half of the hour came, Lu Zhou wanted to make his theory more convincing and obvious, so he couldn't help but write a few lines of equations on the blackboard.

After that, it was like a tsunami.

The entire blackboard was soon filled with equations.

The students sitting in the classroom were fascinated by the first half of the lecture, but they were soon muddled when the second half came along.

"That's the gist of it."

Lu Zhou threw the chalk on the podium and patted the dust off his arms.

"I've finished my lecture. Did you understand everything?"

Everyone, including the professors, looked at him silently; no one dared to speak.

Lu Zhou gradually lost his smile.

“…”

F*ck sake!

These students are not good enough!