

SPECTRUM

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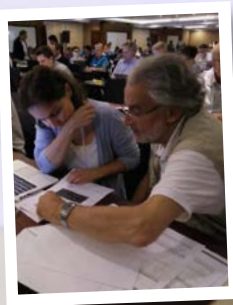
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SPECTRUM as the newsletter editorial name is taken from spectrum widely known in physics world as an image or distribution of components of any electromagnetic radiation arranged in a progressive series according to wavelength that can be found in rainbow as the separation of colors.

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 pembinaan sma



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OTHER FASCINATING PLACES TO VISIT BESIDE YOGYAKARTA



Do you consider yourself a beach hopper, passionate hiker, or urban stroller? Then, you should come back to Indonesia! Beside Yogyakarta, Indonesia has more than just a cultural experience for your inner hunger of adventure. It is a diversified country with more than 200 local dialects, hundreds of local delicacy, and thousands of islands. So, if you happen to plan another visit, this is a list of fascinating places you don't want to miss. Check it out!



Source: www.indonesia.travel

BALI

You may hear Bali long time ago, even before you hear about Indonesia. It is a mystical place where cultural heritage and pop culture blended together, without disturbing each other. It is the most well-known city among the traveler that offers coziness for foreign tourists. You may want to check on Kuta, Ubud, and Seminyak if you plan to travel ahead.



Source: cdn1.condenast.co.uk

RAJA AMPAT

If you're a vitamin sea seeker, then Raja Ampat Islands are the place you absolutely need to visit. It is located on the eastern side of Indonesia – Papua Islands. The beautiful yet vast blue and green ocean is the most likeable spot of them. It offers you tons of water activities, from snorkeling, diving, and beach hopping. You may want to try to explore Misool, Waigeo, and Batanta for the start.



Source: www.rosietour.com

NORTH SUMATERA

From east to west, you will find North Sumatera is so interesting to trip on. It is a melting pot of culture at Sumatera Island, consists of Batak, Malay, Javanese, and other tribes. You can find the historical sites like Istana Maimoon at Medan and the biggest lake of Indonesia at Lake Toba. If you want to challenge yourself, try a piece of Sumatra's durian is also an option.



THROUGH THE HAND OF FUTURE PHYSICISTS!

Taken place at Sportorium of University of Muhammadiyah Yogyakarta (UMY), the Experimental Exams for the 48th International Physics Olympiad was finally begun! Every team has been proven to take it whole-heartedly with very serious preparation. This makes sense as physics is a really serious matter with many sub-disciplines. This experimental becomes vital, because it will take significant part of the score, with 20 points from total score of 50.

The whole process of Experimental Exams was obviously exhausting. But, it was only natural that most of the students could overcome it with determination and hard works. Everyone had prepared both physically and mentally.

It surely put more pressure on the team, as they need to adjust their preparation with the specific experiment that was almost in their reaches. But, it did not stop them to beat the challenge, in order to accomplish IPhO 2017 half through. "The exam was kinda confusing at first, because we needed to wait for

30 minutes. I started the question from the second ones. It was tiring, but also fun", said Dennis Hilhorst from Netherlands team. This was a proof their energy and ambition were nearly unstoppable.

Aside from that, you could see that the Experimental Exams made students from different country and cultures were blended perfectly. While waiting for the exam to be started, they mingled and played together and also shared about their experience at the international competition. This could be seen as a good opportunity to learn and get a new insight from the different team.

As the exam was about to start, you might saw each student entered their own white chamber to complete the exam, which was designed to gain more focus and concentration, as well as minimalizing the cheating during the Experimental Exams. Everyone seemed a little bit nervous, because for some of them, this was the first time they involved in such a massive event.



The exam was finally ended, and soon after they finished the exam, they put the experimental material inside a brown envelope, and walked away the room with relieved face. From this point, the Experimental Exams was successful. The jury team could deliver the right material for the students to be done. The students just need to wait for the outcome that will be discussed for the next following days. Hopefully, the result turns to be good, so everyone could go back to their own country with satisfaction.



A DAY AS A LIAISON OFFICER OF IPhO 2017



Being a Liaison Officer of IPhO 2017 isn't an easy task. They need to prepare for any possibilities during their job, which are waking up the participants, making sure they're in a good shape, as well as providing an assistance for the students' need. "We also become a bridge between the committee and the students, so that any announcement from the management can be understood clearly by them", said Lucky Julian, the Liaison Officer for Cambodia.

Sometimes, the language barrier is also a problem, since not all of the students are the native English speaker, which makes the job harder. "The difference diet between Indonesian and others also become our concern. We want them to stay healthy during IPhO", stated Regi Pratama, the liaison officer of Czech Republic.

But, it doesn't mean the job is all bad. From IPhO 2017, each Liaison Officer also gains a lot of good

experiences. They can create new friends from all over Indonesia – and also the world, whereas from it, they can learn a new culture and perspective. "What I really like the most about being a Liaison Officer is I can learn a new language from different continent. They're also very fun to chat with", closed Olivia Larasati, Liaison Officer of Belarus.



THE JURIES ON THE EXPERIMENTAL EXAMS

Five hours of Experimental Exams was finally ended. It was the time for another job to be done. After the Experimental Exams ended, the juries together with Experimental Exams committees collected the exam papers that had been done by students. Each of them carefully put the paper inside of the brown envelope. Then, they put it together in the bigger envelope and

separated into the country code. To keep them, it was sealed together.

"It seems like an easy task. But, it's not. We need to be very careful, because the paper needs to be in the proper condition for the scoring", said Pekik Nurwantoro, the Coordinator of Theoretical Exam.



Hence, the role of them was vital during the exam. Without the juries and committees, such event wouldn't be possibly happened. From the exam room, the exam papers would be brought directly to the board.

It is officially ready to be examined by the leaders the next following days.



Source: <http://2.bp.blogspot.com>

MEET THE SPEAKER

Ilham Akbar Habibie is an entrepreneur and also a scientist. He is the first child of the couple Hasri Ainun Habibie and Bacharuddin Jusuf Habibie, the 3rd President of the Republic of Indonesia. As an aviation scholar, through Regio Aviasi Industri Company, he provides the Region Prop Program, a domestically-made commercial aircraft project that is a development of the N-250. On his various achievements in the field of aviation, he also received awards from the government.

Ilham also loves reading books. Other than engineering and

business books, Ilham also loves reading fiction and philosophy books. His favorite science fiction books are mostly the work of Dan Brown. He confessed, in every work of Brown that he read, he got something that he did not know before.

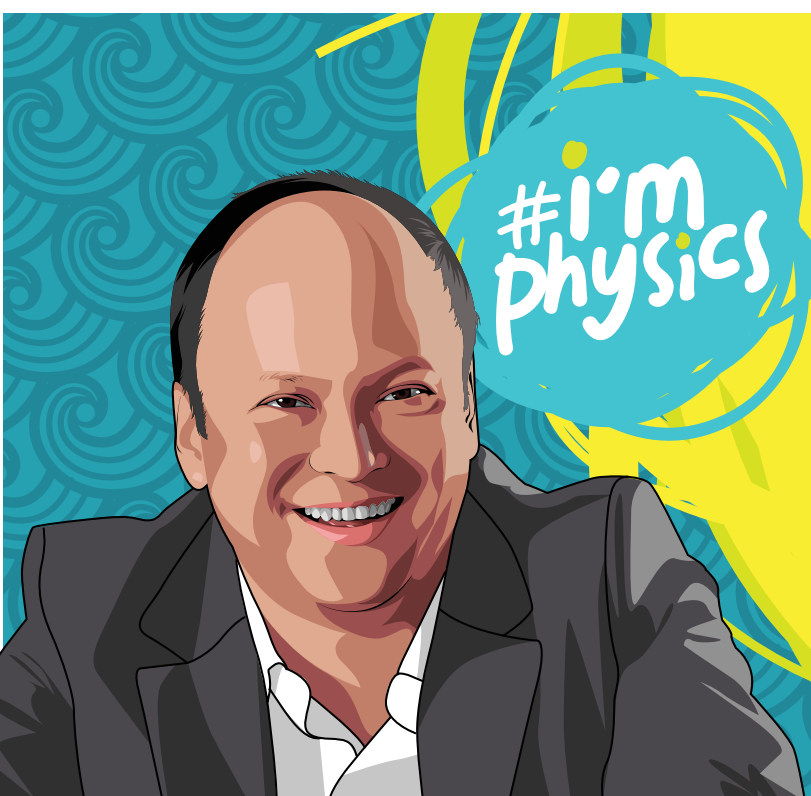
Ilham also likes several other writers, such as Jan Willem van Witering from Netherlands and Umberto Eco from Italy. He reads Pram's books too that had been banned during the New Order era, but has amazed many readers around the world.

According to his explanation, Pram's books are very interesting because it is clear that Pram's mastery is so profound with the stories he has written.

Unfortunately, he is pretty busy lately because he holds a number of important positions in various private companies. Of course, it is so difficult to spend time reading books. Even so, he still dreams that his planes will air someday.

Ilham gave his insight about Indonesia from the economic and aeronautics perspective.

Sources: Okezone.com and National Library of Indonesia



GENERAL LECTURE

THE ROLE OF TECHNOLOGY AND INNOVATION FOR NATION'S DEVELOPMENT:

PROMOTING AEROSPACE INDUSTRY IN INDONESIA WITH R80 AIRCRAFT

48th INTERNATIONAL PHYSICS OLYMPIAD

ILHAM AKBAR HABIBIE

20 JULY 2017

FROM 2:00-4:00PM
AUDITORIUM DRIYARKARA
SANATA DHARMA UNIVERSITY
YOGYAKARTA, INDONESIA





AROUND THE BOARD: PREPARING QUESTIONS ARE PREPARING FOR THE FUTURE

From the early morning, all they did was go into the room, flick through the paper, type something, go outside to look for something to eat, and return to the room. Just like the two days before, what the leaders did was doing the questions. Not fill in the answer, of course. They double-checked whether the questions given were appropriate to be given to the students. After that, they must translate the question into a language understood by the students of their own country.

Compared to the previous International Board Meeting for the Experimental Exams, in general, the process went pretty well this time. "The process is going smoothly. Anytime there is a question that a group of physicists has never seen before or it is our first time to see it, we engage in the discussion; we make sure that everyone understands and everybody is on the same page. Hopefully, it will be done before 4 AM," Paul said.

It was getting dark on the outside, but not with the meeting room at The Alana Yogyakarta Hotel & Convention Center last night. The leaders seem a bit drowned when they were discussing one of the questions to be tested today. Ģirts Barinovs, a leader from Latvia, said that, "We are stuck at the problem about the cosmological expansion of the universe. Many assumptions, which are done, we justified, so people are trying to put everything together."

Creating questions for an international competition is not easy. It is proven because the leaders must be maintained for 19 hours to prepare three questions only. One of the question makers, Mirza Satriawan from Gadjah Mada University, stated that making the questions is a big deal for him and his friends in the academic committee. "We are lecturers accustomed to concept at Masters and Doctorate levels. It is a

challenge for us to make something challenging, but also workable by high school students," he said.

In addition, he also expressed his hope that this test should be a good parameter to measure the ability of the students. "Hopefully the problem is quite adequate, so it can separate the students who deserve to get the gold is indeed worthy of gold, who get the silver is indeed worthy of silver, who get the bronze is indeed worthy of bronze. They can be so beneficial to the world of physics," Mirza said before returning to the room again.



FUN FACT



IT'S NOT MAGIC, PHYSICS

You can change graphite into jewel if you heat it to $3,000^{\circ}\text{C}$ and with 100,000 atm of pressure.

PHYSICS CROSSWORDS

HOW WELL DO YOU KNOW PHYSICS WORLD?

DOWN

1. Your President
2. The thing that Sir Isaac Newton and Master Yoda experts on
3. The linear speed of something moving along a circular path
5. Barry Allen can defeat the speed of..
6. Speed in a given direction

ACROSS

4. Yesterday
7. 'Nineties' is the anagram of this famous physicist
8. The explosion that started all
9. The smallest matter in the universe

