May 2010 Volume 1 Issue 1



Expand Your Mind, Change Your World

DEEE Back As An Institute



Our exclusive interview with Mr.Azrar, head of department, revealing the upcoming changes ahead on pages 1 and 2.

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National Imagine Cup Finals



An inside report of this unique competition from the eye of a finalist on page 8.



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INELEC Back As An Institute

As members of the scientific club, we need many permissions and allowances to organize the simplest event or display any important document. So we did get the chance to meet with our head of department many times, get to know him and appreciate his outstanding personality and level of understanding.

This great person that is on the top of the department organization and helped in making INELEC an institute again is unknown for most of our students. This made us want to share what we know about Mr. Azrar to all of you, dear students. For this purpose, we met with him this last week for an interview to introduce Mr. Azrar and to know the changes that will happen in our department starting next year:

Q: Hello Mr. Azrar, we are honored to be here in your office and would like to thank you for granting us some of your precious time. First, we are sure all INELEC Students would be interested in knowing who is Mr. Azrar, our head of department?

A: Of course,. So, as most of you already know, I was a student at INELEC from 1990 to 1995 Communication Option being my choice. In 1995 I started my "Magister" studies at the National Polytechnic School d'EL Harrach (ENP) that I finished in 1998. In the mean time and in October 1996 more precisely, I started working in the department as part time lecturer in charge of modern physics.

In 1997 I was recruited as teacher-engineer "professeur ingénieur" and took three courses in charge « antennas, microwaves and highfrequency amplifiers" for forth and fifth year students, communication option.

As I received my Magister degree in 1998, I registered for Doctorate studies at the same school (ENP). On January 2^{nd} ,2001 I was recruited as a teacher in INELEC. And from 2003 to 2007 I worked as Assistant of the head department at the same time.

The year 2004 was dedicated to my doctorate dissertation.

And in 2008 i became President of the department's scientific council

And as you may know from 2009 to March, 2010 I was named Head of Department "DEEE". And since this date I am director of the Electrical and Electronic Engineering Institute.

Q:Out of curiosity, we would like to hear briefly a description about how was INELEC when you were student in the 90's?

A: Well most teachers were the same but it was very different in terms of internal regulations. For example the System of examinations was as follows: At start, each teacher would specify the number of exams he intends to give during the semester (one or two tests depending on teacher and a 3 hours final exam at the end of the semester). In order to succeed, each student must get at least 2/4.



Also the grading system was different: the evaluation of students was continuous and based on their semester grade point average "GPA" and on their cumulative grade point average which is the same system used in American Universities (A,B,C,D,E,F continuous system).

Q: I believe our readers are interested to know what your plans are for the upcoming days and the changes that might occur in the department now that it is going back to being an institute among the University of Boumerdes.

A:First, Students' recruitment will not be affected, it will still be on the national level Also DEUA will no longer exist.

Now the institute will hold four main departments :

- English Department.
- Fundamental Science Department.
- Electronics/telecommunication & computer engineering Department.
- Power & control Department.

And each department will have its head. My mission will be to supervise and coordinate between them.

The main differences with actual DGEE will be in: 1/- The budgets & personal : The institute will have its own and independent budget.

2/- Pedagogy: A Curriculum committee ,which is a group of teachers in charge of updating and adjusting the courses, will be created.

4/- Some new options will be added, and the number of exams will be reduced to one and a final exam (synthesis).

Q: This sounds very promising, we would like to know if there are any problems facing the DGEE now, and whether becoming an institute will help in solving them or not.

A:The only problem that the DGEE is facing right now is where the department is situated, I mean we are isolated from both the 'rectorat' and faculty which causes a lot of trouble especially when trying to organize an event. And also the miss affords in general. These problems will be solved when we will become an institute since everything will be internal.

Q: Could you tell us about the way you managed your work, being teacher and head of department at the same time?

A:Well, actually, it's all about setting goals and being organized: As a teacher I am very passionate about my courses, I like my job so I can say I master it very well!!

For the Administration stuff I have gained some experience when I was the head department's assistant.

And of course I always try to dedicated some of my time to my small family because it's very important for me as a father and a husband.

Q: I suppose you have fixed some goals you want to achieve in the next 10 years for example, so how do you see INELEC as an Institute?

A: Actually, it all depends on the team, on the personal. With a good team and with the right people in the right positions, I am confident that we will make some progress.

I think we have discussed everything that is relevant to INELEC history and its future ... Thank you very much again for receiving us and sharing so much information with all INELEC students.

"We would like to express our deepest gratitude, and thanks to Mr.Azrar for his contribution, for accepting to answer our Questions and making us feel so comfortable and welcomed in his office."

> By:BENANTAR Fedoua(T04) TADJER Yasmine(E06)

May 2010 Technology:

Did You Hear About Biometric Passports?

Soon in Algeria, all the issued passports and ID cards will be biometric, and by 2015 all citizens will have biometric passports and IDs. But what do you know about this biometric revolution? What advantages does it bring? At what cost? In this article we will try to put some lights on this new technology.

First, by biometric details and characteristics we mean those details that are proper and unique to each individual: fingerprints, iris of the eye, the facial features and contours...Things that make every single person different.

The revolution lies in the sensitive electronic chip included in the passport that should be treated with great care in the same way as a portable device. The chip inside the passport has a secured memory that contains information about the holder's face such as the distances between eyes, nose, mouth and ears. These details are taken from the passport photograph that you supply. They can then be used to identify the passport-holder easily and efficiently. The chip also holds the information that is printed on the personal details page of your passport.

These high-tech passports will give Algeria an extra tool in the fight against terrorism, illegal immigration and various forms of organized crime.

Moreover, the use of optical scanner with biometric software reader at airports reduces the time identification of the wearer and enhances the authentication of the passenger; in other words, this new technology represents a good means to fight forgery.

So by opting for the biometric passport, Algeria is complying with new international standards.

By: KHELIL Amir Ianis(E06)

Welcome To High-Carbon Future

CARBON is a dirty word. We burn too much of it, producing billions of tones of carbon dioxide that threatens to wreck our planet's climate for generations to come. Before that it was the villain of the piece in the guise of the soot that poured from factory chimneys and turned cities black. Now our long-time enemy could be on the edge of becoming our high-tech best friend. As we learn to shape carbon on the nanoscale - into tubes and sheets, balls and ribbons - entirely new and unexpected horizons are opening up.

The carbon atoms that were forged in the furnace of the universe's stars can be woven together into materials that will help in taking technology to a new higher level. Similar materials promise to make our electronic world run with unprecedented efficiency and speed. Carbon's potential stems from the fact that it is multitalented. Collections of carbon atoms will happily assemble themselves into a multitude of structures, from diamond to graphite. Of these many intriguing structures, "Graphene" is causing the biggest stir. This is partly because of its unusual combination of properties and fantastic electrical conductivity with



strength tens of times that of steel in a material that is transparent to visible light. Best of all, we have finally learned how to make it! In fact, teams from the University of Manchester, UK and from the MIT managed to strip the "Graphene" out of the surface of some crystals widely available on earth.

Nowadays, the big breakthrough everyone is looking towards arises from graphene's potential for revolutionizing our daily gadgets, like computers and cell phones as most of the experts think that "Graphene" looks like the most promising way forward!

By: OUDJIDA A.Aziz(E06)

Hybrid Fusion: The 3rd Nuclear Option

Among the energy sources available on earth today, nuclear power remains the most attractive. As a matter fact, it promises to help cut carbon emissions and reduce imports of fossil fuel.

What's more, unlike renewables, it can ensure a stable baseload electricity supply whatever the weather.

However, nuclear energy also creates problems of its own, not least the risk of Chernobyl-style accidents and the production of radioactive waste that takes tens of thousands of years to decay. Latest technology discoveries as Hybrid Fusion promise to maintain nuclear energy, while overcoming all its concerns:. Hybrid nuclear fusion combines the two forms of nuclear power, fission and fusion, in a single reactor. This has several advantages over fission alone: it minimizes the environmental impact, reduces risks, enlarges reserves of nuclear fuel and is more flexible to operate. Fission, the process behind conventional nuclear power, harnesses energy from the radioactive decay of uranium and other fissile materials. Fusion, meanwhile, is an experimental technology that extracts energy from processes similar to those occurring inside the sun, where hydrogen atoms are fused together to form helium. On another hand, Pure" fusion is often seen as the solution to all our energy problems, and it has undeniable advantages over fission. It pro-



duces no long-lived nuclear waste and needs no fuel other than water. But it could take another 50 years to make fusion technically and economically viable - if it can ever be made to work at all.

In addition to that, numerous issues related to the construction of reactor capable of handling pure Fusion reaction like size, resistance of materials, stability of reaction remain still unsolved. However, Hybrid nuclear power potentially solves both these problems. Finally, one of the main advantages on hybrid plants is the capacity of controlling the power output allowing nuclear power to be combined with renewables like solar, wind or geothermal energies.

By;OUDJIDA A.Aziz(E06)

Medibots : World's Smallest Surgeons

Imagine a man in comatose on an operating table. An enormous spider that hangs above him has plunged four appendages into his belly. The spider made of white steel, probes around inside the man's abdomen then withdraws one of its arms. Held in the machine's claw is a neatly sealed bag containing a scrap of bloody tissue.

This da Vinci robot, has allowed a surgeon sitting behind a control desk to perform a surgical operation over conventional ways. Yet the future of robotic surgery may lie not only with these "beasts" but also with devices at the other end of the size spectrum. The surgeons of tomorrow will include tiny robots that enter our bodies and do their work from the inside, with no need to open patients up or knock them out.

While nanobots that swim through the blood are still in the realm of fantasy, several groups are developing devices a few millimeters in size. The first generation of "mini-Medibots" may infiltrate our bodies through our ears, eyes and lungs, to deliver drugs, take tissue samples or install medical devices. In fact, engineering challenges are formidable, in-



cluding developing new methods of propulsion and power supply. There are several ways that such robotic surgery may be further enhanced. Various articulated, snake-like tools are being developed to access hard-to-reach areas. One such device, the "i-Snake", is controlled by a visiontracking device worn over the surgeon's eyes allowing greater precision, as large hand gestures can be scaled down to small instrument movements, and any hand tremor is eliminated.

Nowadays there are over 1000 daVincis being used in clinics around the world!

By: OUDJIDA A.Aziz(E06)

Towards Binary Maybe?

Social networking websites are definitely the latest trend on the internet. They changed the very aspect of our daily lives, but along they also changed the way we communicate. And in this article, I will try to put some lights on this new communication language.

It is true that social networking websites enable us in a very practical way to stay in touch with relatives, friends and family (except for those we try to avoid!),no matter in which spot of the world they are, very impressive isn't it?

They offer many interesting features and applications like sharing photos, videos, having real time visual conversations and so on (sending invitations to strangers asking for their friendship with the weirdest expression I have ever heard, the famous " add me!!" ...just imagine it works the same in the real world!).

But the part that completely blows my mind in this whole process is not the advanced technology unfortunately but rather a small insignificant detail: **the language**!!

For the majority of users of these virtual communities ; it is completely normal and ordinary , but for a minority of people having some difficulties in staying "updated" or the ones who are not yet ready to give up the old way (holding a pen and a paper... remember?), it is frightening!!

"hv a gud n8","thnx 4 da lift"," brb ",w@ do u mean?"," dnt worry M f9"...."Lol" (personally it was lately discovered!!it's an abbreviation of "Laughing out loud" or "lots of love" depending on the context!!) It is the new English used while texting with cell phones and in instantaneous messages via your email box.

When you think about it you will find that youth have developed a very creative manner to gain space and time, in one message of barely 160 characters one can tell the whole history of the united states!!...the point is that it is all for the seek of *simplicity, speed* and *efficiency*; why would you spend so much time writing pages of endless words and expressions while you can do it in a few lines?

Actually if this new "fresh" language was used only in texting, it would not be a problem at all. But the question rises when young people start to adapt it even at schools since they are getting used to it (think of the time they spend in front of their computers typing on keyboards). Most of school kids today cannot write a simple letter to their parents because they are not able to construct one meaningful sentence with no spelling mistakes... Their vocabulary is a little bit better than that of a caveman, Grammar grades are in continuous decrease. Their academic level is falling apart.

One can ask: Why shall we restrict ourselves to one way of writing, a way with many complications concerning grammar, conjugation rules? Isn't language only a conventional mean of communication? (Take hieroglyphs for example! Egyptians dialect was a range of faces, animal, geometry symbols...But still they were communicating!!) So why don't we use the easiest, fast spreading alternative? True, but don't you think that it is an "abuse" of language to replace its words by a cold collection of characters of "whatever what"(numbers, punctuation...)

Beside, one has to be armed with a good academic language (after all there is a world outside your myspace and facebook page, where you have actually to talk in a language that everybody can understand!)

In da end, M wondrin'; wil da folowin' generationz B able 2Njoy da charm of N old book written by a gud riter?! lets keep hope N say Yes ;)

By: SNOUSSAOUI Amel(E06)



The End Of Global Warming?

The UN climate change summit held in Copenhagen Danmark on December, 7 to 18th of the last year, was supposed to be the biggest environmental meeting in history, and was expected to produce a historic treaty to succeed the Kyoto protocol for curbing greenhouse gases.

The success of the tough negotiations between 192 countries boiled down to one thing : take measures to put the planet on the road to a low carbon future in which global temperature rise stays below 2°c. In order to achieve that warning limit, scientists say that cuts in the world carbon-emission of 25 to 40% are needed. And the responsibility to make the deepest cuts falls on developed countries such as the UK and US which have grown rich on burning fuels and still emit vast amounts per person.

Of course, the fact that 17% of all carbon currently emitted by human activity comes from razing forests was not forgotten in the summit, stopping deforestation was also one of the main issues discussed and the solution that popped up was to pay people not to chop trees down. Another issue negotiated in the important conference was clean technology transfer, the products and services must be developed quickly and efficiently all over the globe.

All those topics, solutions and statistics seemed pretty promising and encouraging at the beginning of this historic summit, unfortunately, global warming is also an economic problem in the eyes of developed rich countries and it requires economic solutions and sacrifices they are not ready to afford.

So, as you may expect, the so-called Copenhagen accord was a total "failure" and "disappointment" as environmental organizations characterized it, since after two weeks of stalled talks, the countries approved a five-page document that did « recognize » the need to limit global temperature rising no more than 2°C over 10 years, but DOES NOT contain any commitments or penalties for carbon emission reductions and among other disappointing deals, the earlier forestry one lacked the independent verification of emission reduction needed by the countries.

To finish, I think that it's time for us to react,: If the world's leaders are not able to come to an agreement about global warming, and can't see the danger of the situation, we should all, as human beings, step up and take important decisions for ourselves, for our planet.

I believe that pollution and its consequences are the responsibility of each one of us and simple daily acts can definitely make a difference ; so let's reeducate ourselves to make habits of those acts, and start a new lifestyle that could save our planet. The fate of the earth is in our hands.

By: BENANTAR Fedoua(T04)



May 2010

Inelectronics' Magazine

Volume1

Student

imagine cup

As a member of the team Aurora_Future, I had the chance to dispute the national Imagine Cup Finals that took place a few weeks ago at ESI. And in this article, I'm going to walk you through this unique and amazing experience.

Lagiogi

Imagine Cup, for those of you who don't know it, is only the *biggest* and *greatest technological competition* gathering as much as 250,000 student all over the world, competing in different sections: Digital Media, Embedded systems, software design...A great opportunity to let loose your imagination, show your potential and make a difference.

This year's theme was about designing a solution that meets one of the challenges of the Millennium set by the Unicef (decrease the rate of extreme poverty, spread education,...). Out of more than 800 teams at start, only eight made it to the national software design finals, including ours. And after announcing the list, each of the eight teams had only about one month to finalize the project before the big day: *Wednesday, April 28th*:

Eight projects, *eight* unique ideas fighting over *one* single ticket to the international finals in Poland.

Our project entitled "Live and help" was about creating a platform to make helping the less fortunate's within any community easier and faster by specifying their needs, and making these information available for people of that location that are willing to help. It also aims to create an efficient link between charity organizations and members of the community.

As the big day was approaching, stress was starting to surface: Sleepless nights, endless bugs, flawed rehearsals..Will we make it before the deadline or not? Will we succeed? An important concept to keep in mind while working on your IC project is **TEAMWORK** And for maximum efficiency, tasks must be split between members according to each one's capabilities, for example someone handles the interface, another one handles the database and another the slides and videos... After a month of hard work, everyone is tired, at the edge of breaking down...This is it! Early Wednesday morning, here we are: As

you walk in, you feel that something unusual is going on in ESI..A festival, a big party!! We received our badges and T-shirts, and stepped in the presentation room: An Amazing crowd! A great atmosphere!!

Since our presentation was scheduled to be



at 15h30, we went to library to set the final modifications, and rehearse.

To be honest, I kind of lost the sense of time. I could hear the audience applauding team after team but before I realized, last but not least, it was our turn.

We stepped on stage, and it was thrilling: All these people cheering you: friends, people you've never met...As you're setting your computer, preparing your slides, you know that for the next twelve minutes, you're gonna have to do your best, be at your best and hope that everything goes as planned.

With shivering hands, you hold the mic but as soon as you start talking, everything else just fades away. You see the way the audience is reacting to your words, and it just pushes your comfort level higher. You might face problems, bugs, issues with your application, It happens but you have to remain cool and Zen, always stay in control. The twelve minutes end up, quicker than you thought, and you hear a massive sound of clapping. You answer the questions of the jury, and that's it, it's over!

But Imagine Cup is not only about competing, it's also about getting to know other students who share the same interests as you do. And although we didn't win this time, we learned a lot: new friends, new perspectives, new horizons!

It was a definitely the best and most rewarding experience I've ever had! IC 2011, here we come :)

By: BOUNOUGHAZ Med Amine(E06)