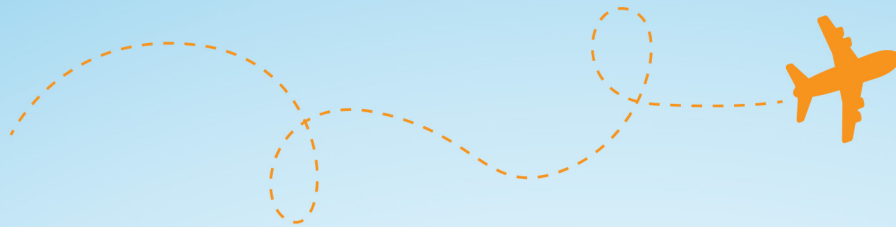


Diploma

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The opinions and conclusions contained in this magazine solely express the author of each article, who bears the legal responsibility and should not be interpreted as representing the official position of the Democritus University of Thrace, of the IAS DUTH SBC, of the Advisor or the editors of this magazine.



**Industry
Applications
Society**
SBC • DUTH



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Letter from the Advisor

Dear friends of the IEEE Industry Application Society Student Branch Chapter of Democritus University of Thrace, Greece.

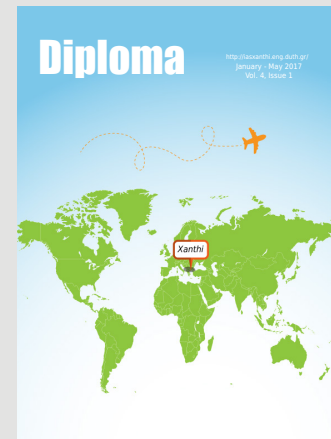
Another issue of our Diploma Magazine is ready. This year, IEEE Industry Applications Society celebrates 50 years of existence, while our Student Branch Chapter only three. Nevertheless, we are proud to believe that this Chapter became a live cell of this big organization from its first steps, from its first activities. Those activities were highly appreciated and supported from the IAS Chapters and Membership Development Department and to this aspect the printed edition of our Magazine is financially supported from CMD and distributed during the last two IAS Annual Meetings. The feedback from the scientific and professional community that participated in these Annual Meetings and read our Magazine is so encouraging that will certainly motivate our Student Members to produce more issues in the future.

Prof. Athanasios Karlis

Chapter's Advisor

ALL PRINTING EXPENSES ARE COVERED BY IAS CMD

DIPLOMA



On the cover: A full and creative year of conferences

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IAS DUTH SBC ACTIVITIES

by Eleni Bouloukosta, DUTH SB IAS Chapter Chair

As every year, 2016 was a **very productive year** for our chapter. Our chapter's **activities were selected to attract the interest of Democritus University students** and offer them knowledge as part of their studies.

Specifically, at the middle of May, a lecture on **“The role, the improvement and the challenges of department of human resources (HR) and its approach within a successful interview”** held by **Dr. Konstantinos Georgiadis**. We invited Dr. Georgiadis to talk to us about this issue, which is **necessary for young professionals and graduate students**. Dr. Georgiadis specializes in **human resources management, with experience in consulting services and HR management companies in Greece and abroad**. This speech, was focusing on the **feature of HR management**, which now evaluates and trains the employees individually, paying great attention to their skills. Within this lecture, **an interview was simulated and Mr. Georgiadis tried to notice the most common mistakes that occur**.

The next event was a lecture on **“Measurement and control systems using LabView”** by **Dr. Konstantinos Kalovrektis** at May 23rd 2016. The lecturer, Dr. Konstantinos Kalovrektis is a **Lab-View Developer**





application development and LabView education consultant. At this lecture, particular emphasis was given to **the importance of this powerful programming language that provides to the user the ability to measure, control and analyze DAQ systems**. He managed with his knowledge to **explain to the public the range of applications that can be achieved with the use of LabView**. He also emphasized on the **stages in order to develop an application**. During this lecture, one of our students had the chance to **develop his own simple application**.

Also, with the beginning of new academic year, the **Annual Chapter Presentation** for the new students took place during the event IEEE Day. This speech was done in



collaboration with IEEE SB of Thrace and DUTH Women in Engineering Student Branch Affinity Group, which presented their activities too. Guest speakers were **Mr. Athanasios Kakarountas, Vice Chair of IEEE Greece Section** and **Mr. Stamatis Dragoumanos, Educational Activities Chair of IEEE Greece Section**. An important

ABOUT US

An important moment of the event was the time, when Mr. Kakarountas handed to our Chapter Advisor Prof. Athanasios Karlis, the award “R8 Chapter of the Year 2015”. This award was a great honor for all the members. As part of this briefing, new registrations were held and many of the older members renewed their membership too, which is very positive.

Last but not least, a lecture on **“Professional rights of Electrical Engineering”** by **Ms. Zoi Chatziantoniou**, a certified Mechanical Engineer and **Mr. Argiris Plessias**, **President of the Executive Committee of the Technical Chamber of Greece (Regional Department of Thrace)**. As it is natural, a large number of interested students were there, with particular attention about the observations which were made by Ms. Chatziantoniou. On this lecture, a **distinction was made between the exclusive rights of freelancers, engineers from industry, government officials and engineers in training**. Ms. Chatziantoniou just explained **the steps to be followed by a young engineer from the moment he get the degree**. Beyond the rights of engineers, she noticed also the responsibilities under the law, such as observance of the penal code and labor legislation, and the discipline at the Technical Chamber of Greece.



As it is obvious, all the activities during the year is based on the **wishes and needs for knowledge of the students, both of our members and the rest of the student community**. Thus, in cooperation with chapter’s advisor, Dr. Athanasios Karlis, we achieve every time with a great success the organization and the conduct of all actions. ●

WHAT'S NEXT?

by Christina Panagiota Malliou, DUTH SB IAS Chapter Treasurer

After the exam period is over, our members were more eager than ever to start once again preparing new activities and to organize as many innovating initiatives as we can.

We have already started the **preparations for workshops, webinars, educational visits and of course lectures and seminars** providing to our members technical skills as well as soft skills that will help them become more competitive in today's demanding job search. In addition to this, **all of our upcoming activities aim once again to promote engineering in the best possible way.**

One of the first goals we have set is to organize the **2nd R8 Mediterranean SB Meeting**. The R8 Mediterranean SB Meeting was organized for the first time in 2013 in Rome, Italy. Understanding the importance of **cooperation between the chapters** we could only support and promote this workshop even more. We believe that this meeting will establish a **strong network between active student groups**, will **strengthen students' relations** and **motivate young students become active volunteers**. In addition to this, it could pave the way for more **common activities between chapters.**

After our annual presentation, held on October 20th, we were glad to see that a lot of our **freshmen students decided to step up and volunteer** to organize our next activities. In our plans is to organize a **one day workshop on electric vehicles** and give the chance to our members to familiarize with the techniques used nowadays and our University's electric vehicle.

A major part of our activities are always **seminars and lectures**. These seminars do not just provide to our students important information and knowledge on a subject they wish to learn more about but they also help them evolve and stay up to date with their field of interest. One of our upcoming lectures would be a lecture by **Prof. George Zissis from Paul Sabatier University (Toulouse III).**

Last but not least, as always we will be organizing **various educational visits to the local industrial area** to provide to our members a more practical view on our field. Our next educational visit is already being organized and it will take place before the Easter vacations. ●

NANOTECHNOLOGY IN SPACE

by Konstantinos Papatheologou, DUTh SB IAS Chapter Secretary

Generally, to nanotechnology

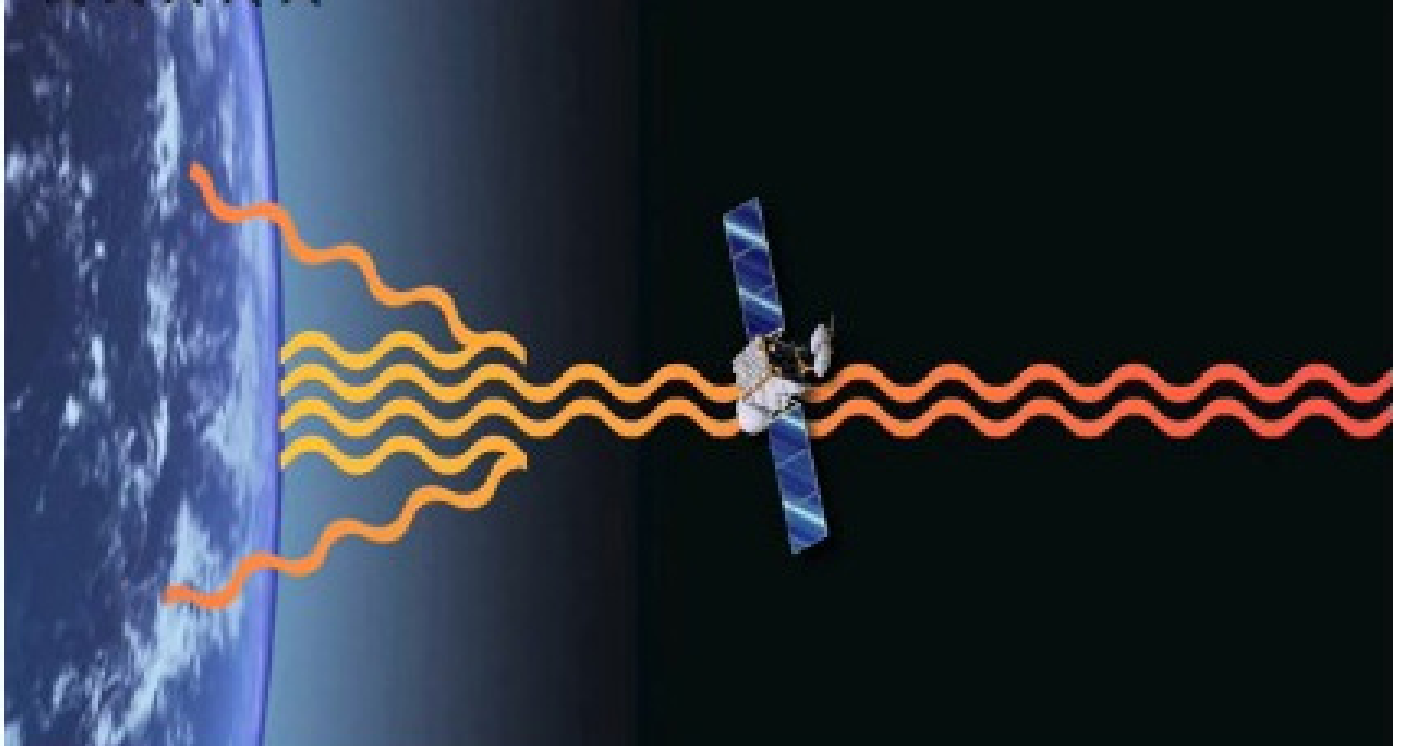
A trend that concerns a lot nowadays in engineering is **nanotechnology**. Not only engineering, but also **materials science, chemistry and physics are some of the science fields that nanotechnology can be applied**. In order to perceive the proportions that it concerns, we should mention that **one nanometer is a billionth of a meter, or 10^{-9} of a meter**. This means that nanotechnology applications vary, covering fields such as medicine, electronics, air and water quality, chemical sensors, **creating new materials with unique properties and even making space-flight more practical and fordable**.

Most advantages of nanotechnology rely on upon the way that it is **possible to alter the essentials structures of materials at the nanoscale to accomplish particular properties**, thus extending the well-used kits of materials greatly. Utilizing nanotechnology, materials can adequately be made to be **more sturdy, lighter, more durable, more receptive, more strainer like, or better electrical transmitters, among numerous different traits**. Until now they already exist **over 600 everyday products that rely on and use nanoscale materials** to achieve better results and demonstrate distinctive characteristics.

Nanotechnology in Space and Satellites

Nanotechnology will play an important role in the future space missions. A good example where nanotechnology is crucial is the propulsion systems of the **rockets and spacecraft**. Almost all of **today's rocket engines rely on chemical propulsion**. All shuttle utilizes some type of chemical rocket for dispatch and most use them for attitude control too. **Rocket scientists are effectively researching new types and forms of space propulsion systems**. One intensely investigated area is electric propulsion that includes field emission electric propulsion, colloid thrusters and other. Here comes a nanotechnology concept where **electric propulsion utilizes electrostatically charged and accelerated nanoparticles**

as propellant. A large number of micron-sized nanoparticle thrusters would fit on one square centimeter, **permitting the manufacturers of profoundly small thrusters.**

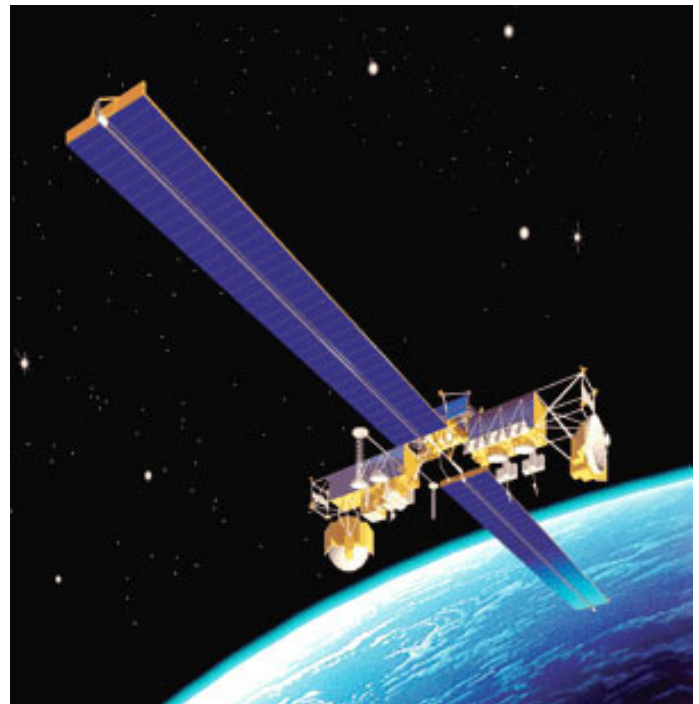


Furthermore, **radiation protecting is a territory where nanotechnology could make a noteworthy commitment to human space flight.** NASA says that the dangers of introduction to space radiation are the most noteworthy element constraining people's capacity to partake in long-span space missions. A considerable measure of exploration in this way concentrates on creating countermeasures to shield space travelers from those dangers. **To address the issues for radiation security and also different necessities, for example, low weight and basic solidness, shuttle planners are searching for materials that help them create multifunctional rocket bodies.** Progressed nanomaterials, for example, the recently grew, isotopically enriched boron nanotubes could clear the way to future rocket with Nano sensor-coordinated frames that give **powerful radiation protecting and they are also useful for energy storage.** Another area of required radiation protecting is the **protection of installed electronics.** It has been accounted for already that electronic devices turned out to be more radiation tolerant when their measurements are reduced. For instance, **multi-quantum well or quantum dot devices can be tens or hundreds times more radiation tolerant than customary devices.** It even was demonstrated that quantum dot/CNT-based photovoltaic devices were **five times more safe than ordinary bulk solar cells.** A few studies on radiation effects have been published recently, especially focused on the **effects of high energetic particles such as heavy ions**

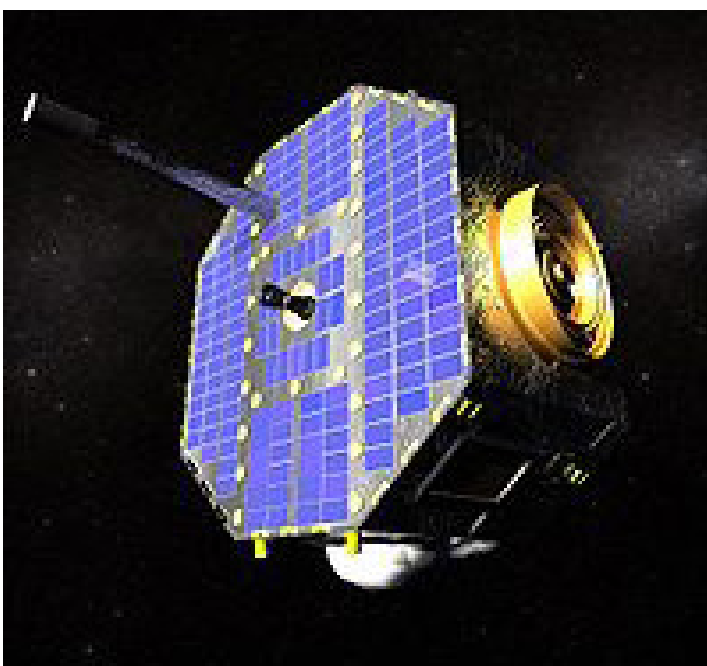
and electrons on nanomaterials like nanowires and nanocarbon tubes. Main goal of those studies is to determine the alteration in the structural properties of the nanomaterials after irradiation.

Another usage of nanotechnology in satellites is **the creation of a material that can help observe and distinct abnormalities**. As indicated by a group of NASA designers now building up a blacker than black nanomaterial that **will help researchers obtain hard-to-get scientific estimations or observe as of now unseen astronomical objectives, similar to Earth-sized planets in orbit around different stars**.

The nanomaterial being created by a group of 10 technologists at the **NASA Goddard Space Flight Center in Greenbelt, Md., is a slim covering of multi-walled carbon nanotubes**. In this application, NASA is keen on **utilizing the innovation to smother errant light that is ricocheting off instrument segments and contaminating estimations**.



In conclusion, nanotechnology can be proven to be very helpful tackling obstacles that can't be confronted with natural materials and their properties. Especially, in the exploration of the universe and space, nanotechnology will be crucial. ●



ELECTRIC VEHICLES AND RENEWABLES LEAD THE WAY FOR THE FUTURE SMART GRID

by Adamantios Bampoulas, DUTH SB IAS Chapter Vice Chair

The electrified transport sector appears as a **promising solution to the challenges of climate change, energy security and geopolitical concerns about the availability of fossil fuels**. The developments in interactive communication infrastructure and the control of both the power electronics and the Power System render electric vehicles an attractive spinning reserve and ancillary service to better manage grid resources. **The intelligent charging during low electricity demand periods and their discharge during peak hours enable balancing the electricity demand**. Research on the potential benefits of the penetration of electric vehicles in the existing Power Systems has gained considerable momentum in recent years. Indeed, given that vehicles stay parked for long periods, **the use of stored energy in their batteries can further promote the penetration of this technology in the market**. In this context, **the electric vehicle technology can provide supportive action to the grid through ancillary services** such as loss reduction as well as voltage and frequency regulation.

Therefore, **electric vehicles can be an alternative promising technology in a market monopolized by internal combustion cars**. The increase in their use may result in a **significant reduction in oil consumption as well as to offer significant environmental benefits such as reducing emissions of the greenhouse gases**. However, these benefits will vary depending on the power source used to charge the electric vehicle. Today, **most electric vehicles are charged from the mains, where energy is supplied from any available source**. Therefore, it is not certain that electric cars powered by Renewable Energy Sources (RES). In fact, **if there is no available energy from RES, the grid**

should be fed with extra power produced from fossil fuel sources to meet the increased load demand. Therefore, the coordinative operation of RES and electric vehicles is a **key factor in ensuring the environmental sustainability of the electrified transport sector.**

At the same time, the penetration of Renewable Energy Sources (RES), especially photovoltaic and wind systems - despite their environmentally friendly nature - are subject to **problems related to energy production.** These problems concern the intermittent and generally uncertain nature of RES because of their dependence on stochastic - primarily environmental - factors. Generally, **the stable and secure operation of Power Systems is based on the electricity demand forecast in order to plan the necessary power generation in the most economical way.** This is accomplished by taking into account the appropriate confidence intervals and technical constraints. **The typical characteristic of wind and solar energy complicate the modeling of these systems and make difficult the prediction of energy production.**

The widespread penetration of RES in Power Systems will require large energy storage systems in order to satisfy at any time the requirements of both the quantity and the quality of the generated electric power. From this point of view, all electric vehicles can play a very important role as dynamic energy storage systems under the Vehicle to Grid - (V2G) technology. For Power Systems, electric vehicles are **not only dynamic and unpredictable loads but also potential energy reserves for the grid.** In fact, electric vehicles can offer the capacity of their batteries to RES, such as solar and wind systems, supporting the efficient penetration of their intermittent production.

For the widespread adoption of this technology, **car users should know anytime the likely cost of purchase / sale of electricity to the grid.** At the same time they should **provide information to the system administrator** such as the driving schedule, the current and desired state of charge of the vehicle battery, etc. The above demonstrates that **electric vehicles can change the way consumers interact with the grid,** under the deregulated electricity market.

However, the penetration of electric vehicles and V2G technology **requires advanced metering systems, communications and control.** In this way, the existing grid can be transformed in its future form, also referred as **“smart grid”.**



WHAT A FULL YEAR!

by Christina Panagiota Malliou, DUTH SB IAS Chapter Treasurer

“In a time that provides dozens of great ways to learn, from reading online to listening to podcasts, and watching videos, why should we bother with attending conferences and meeting? It’s time consuming, expensive and tiring”

Fortunately, that’s not the case or the attitude of our chapter members!

This year our chapter members **travelled all over the world**, excited and eager for each and every moment they spent in the conference.

In this issue of our magazine, **four of our members describe their experience at the conference they attended.**

Mr. Aristotelis Farmakis will share with us his experience after the **2016 IEEE Young Professionals’ Face-to-Face meeting in Iceland!**

Ms. Eleni Bouloukosta and Ms. Christina Panagiota Malliou will inform us about **IEEE IAS Annual Meeting 2016 that was held in Portland, OR, USA**, followed by **Ms. Victoria Meskova's** report after attending the **IEEE International Conference on Teaching, Assessment and Learning for Engineering (TALE) 2016!**

We sure hope that our members will have the opportunity to attend even more conferences in the future! ●

From left to right: Ms. Eleni Bouloukosta, Ms. Christina Panagiota Malliou and Mr. Adamantios Bampoulas during IAS Annual Meeting 2016.



2016 IEEE YOUNG PROFESSIONALS' FACE-TO-FACE MEETING IN ICELAND

by Aristotelis Farmakis, DUTH SB IAS Chapter Webmaster

It was April, 2016. **The 2016 IEEE Young Professionals' Face-to-Face meeting was hosted in Iceland, the land of fire and ice.** Myself, a member of our IAS DUTH Student Branch Chapter, was asked to represent the Industry Applications Society Young Professionals Committee. After all, our **IAS is a Society seriously concerned about globalization and youth, and opportunities for cooperation are always welcome and appreciated.**



Left: Lava Cave - The land of fire. Right: Snowy Mountains - The land of ice

The main goal of the meeting was that the IEEE Young Professionals Committee engages with the IEEE Technical Societies' and Affinity Groups' Young Professional Programs and real emphasis was given on establishing Mentoring Programs, promoting Signature Meetup Events and shaping the community's future path based on common grounds for cooperation

with Technical Societies and Affinity Groups. The meeting was **clearly successful** and grounds for effective collaboration and representation were set.

The meeting was held over the course of three days. **Karen Bartleson** (IEEE President-Elect at the time and current IEEE President), **Randi Sumner** (IEEE Senior Director of Strategy and Entrepreneurship), **Mary Ward-Callan** (IEEE Technical Activities Managing Director), **Celia Desmond** (IEEE Division III Director) and **Costas Stasopoulos** (IEEE Region 8 Director), **honoured us with their presence.**

First thing in the meeting agenda was **an introduction by IEEE President-Elect Bartleson.** We briefly discussed the **proposed IEEE constitutional amendment and familiarized with the IEEE organizational structure for 2030.** **Mario Milicevic**, IEEE Young Professionals Committee Chair at the time, went on explaining the **progress IEEE Young Professionals had done this past year** and laid the grounds for **the upcoming business plan, focusing on the future of our program.**

Lisa Delventhal, Staff Program Manager for the IEEE Young Professionals Committee, **introduced us to further IEEE activities and programs and the real work in smaller appointed groups began.** Discussions around the IMPACT blog and the intended Mentorship Program for the Technical Societies took off.

IEEE Technical Societies' engagement, IEEE Entrepreneurship and breakout sessions went on. Discussions on how to **training and enable volunteers to organize and run local and global Signature Events went on,** as well as **brainstorming** on new opportunities for initiatives.

Last but not least, **we were introduced to the Community Engagement Workshops,** an IEEE Young Professionals initiative to **support the hosting of humanitarian related events** in the IEEE field of interest and the SIGHT humanitarian program. **Voting on the future path of IEEE Young Professionals Committee took place and annual planning were discussed.**



There is however something I haven't yet mentioned. **Such meetings need strong social events**, and the first such social gathering was for **dinner at a nearly 360 degrees view of Reykjavik, at the notorious rooftop restaurant of our Hotel.**

On the second day, we went on a **road trip that somehow led to us listening to our guides "singing" chilling Viking prayers in true dark, a few kilometres below the earth's surface, inside a lava cave.** Next stop would be the **largest geothermal power plant in the world, a green plant (aiming towards soon becoming totally green, using emissions' recycling),** where **power enough for all of Reykjavik is generated** by heat and pressure coming **from the lava just beneath our feet.** That night, **a model meetup event was organized** at a Pub, downtown. **Networking was the main goal,** a spinning wheel that under the winning hands of our IEEE Young Professionals Chair soon became the attraction that sponsored our event with constant free beers. **IEEE Young Professionals and IEEE Iceland Section members were soon one.**



Our last social gathering in Iceland, was the final day's **lunch at a prestigious restaurant by the port.** The **company was great;** the **food was amazing.** There was especially one dish for which the waitress initially could not remember the English translation. However, it made little difference, as she only needed a few seconds until she came up with a better way to let us know **what kind of meat it was we had just tasted.** She simply responded, with a heavy accent: **"Ahh, it's Rudolf!"** ●

The taste of "Rudolf"!

IEEE IAS ANNUAL MEETING 2016

by Christima Panagiota Malliou, DUTh SB IAS Chapter Treasurer

DUTh SB IAS Chapter has a long and proud tradition in attending the IAS Annual Meeting! Each year's Annual Meeting provides to our chapter members a way to **interact with experts**, to **present and discuss the latest developments** in the application of electrical and computer engineering and of course to **create connections with engineers worldwide**.

This year's IAS Annual Meeting took place in Portland, OR, USA and the following chapter members **Emmanouil Bafounis-Kottas, Adamantios Bampoulas, Aristotelis Farmakis, Andreas Giannakis, Konstantinos Kafalis, Loukas Kotas, Christina - Panagiota Malliou and Eleni Bouloukosta** along with our **Chapter Advisor Prof. Athanasios Karlis** had the chance to attend the IAS Annual Meeting. Like every year, this Annual Meeting was **full of interesting technical presentations, cultural events** and it was a **great opportunity to meet new people and gain even more experience**.



CONFERENCES

During the first day, all of our members attended the **CMD workshop**. The CMD officers presented this year's **IAS activities and the possibilities for the students within IAS**.

This year, a **special session for the new country attendees was organized by Ms. Beata Polgari**, giving the opportunity to four new chapters to be recognized.



At the end of the new country attendees session, the **Outstanding Member Awards were presented and organized by Ms. Megha Tak**. During this session, *our Chapter Advisor Prof. Athanasios Karlis received the "Outstanding Student Branch Chapter Advisor Award"*.



A group picture was taken when the award session was over.

During the second part of the CMD workshop, **seven student led technical conferences were presented** and **Dr. David Vaglia explain why he became the most frequently invited Distinguished Lecturer.**



After the lunch break, the **Humanitarian Project Contest winners** gave us a short presentation of their projects and received their awards.



CONFERENCES

When the Humanitarian Session was over, the **Student Area Chairs presented the activities and the progress over the past year**. During this part of the CMD Workshop, the **Student Branch Chapter Chairs presented their chapters' past and upcoming activities**.



When the CMD workshop was over, the **Welcome Reception was held along with the Student Poster Session and the Robotics Demonstration**. Our student member *Mr. Emmanouil Bafounis-Kottas* presented his diploma thesis, which received the *third prize award at the Student Thesis Contest 2016*, and received a "Certificate of Appreciation". Also, **a poster about our chapter's activities was presented by Ms. Eleni Bouloukosta with cooperation with Ms. Christina P. Malliou**.

On Monday October 3rd, 2016 all of our members attended the Plenary Session after the Welcome Breakfast. **The keynote speaker, Dr. Kamiar J. Karimi, Senior Technical Fellow, Boeing, reviewed the aircraft energy systems and presented the power sources used in traditional aircrafts**. Furthermore, the MEA concept and its advantages were discussed and the contribution of power electronics in MEA was presented. The future trends in MEA were also discussed. Afterwards, our members attended the **Student Technical Session, where our member Mr. Emmanouil Bafounis-Kottas presented his awarded thesis "Use of infrared thermography (IRT), as a non-destructive testing method for fault diagnosis and prognosis on sailing boats and safety protocols at sea"**. A special session on networking was organized by the **Industrial Lighting and Displays Committee and several interesting papers were presented**.



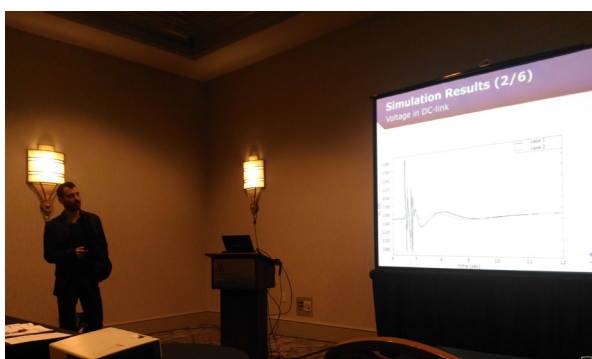
On Monday noon, all student members attended the **Myron Zucker Student Luncheon**, where an interesting presentation about Myron Zucker, his life and his enthusiasm about electrical engineering that lead him to support **Electrical Engineering students providing the possible travel grants took place**. After the Zucker Luncheon our members attended the industrial automation and control committee session and the humanitarian project contest session.



At the end of the day, the **CMD dinner** took place. **Dr. Peter Magyar and Mr. Dave Durocher** presented the chapter awards and we all had the chance to participate and **attend some very interesting cultural performances**. During the CMD Dinner *our chapter received many awards including the 1st prize award at the Chapter Web Contest 2016 (left)*.

CONFERENCES

For our performance, after our cultural video, we prepared a **puzzle game** (right) **with quiz questions about Xanthi**. Dr. Tomy Sebastian and Mr. Dave Durocher were invited to the stage in order to solve this quiz.



On the third day, many **technical sessions took place** at the same time, giving the opportunity to the participants to choose which subject they are interested to attend. As part of the session on “Energy Systems”, **Democritus University was represented by three graduated students**. A paper on *“A Study on the Dynamic Behavior of a DFIG with Sensorless-based Control in Cooperation with a Fuzzy Controlled Energy Storage System”* was written by **Mr. Giannakis Andreas** (upper), **Mr. Bampoulas Adamantios** and **Prof. Athanasios Karlis**. Also, a paper on *“Comparison of Flywheels and Supercapacitors for Energy Saving in Elevators”* was written and presented by **Mr. Kafalis Konstantinos** (low) and **Prof. Athanasios Karlis**.

Other interesting presentations, from the session on “Power Systems Engineering”, attracted some of our chapter’s members and they attended them with particular devotion.

The next day, on Wednesday October 5th, except from the technical sessions which held throughout all the day, one of the most important events was **“President’s Banquet”**. Before the start of the dinner, a buffet preceded for those conference attendees who received invitation, including professors and those who won an award.

Then, at the “President’s Banquet”, **Mr. Dave Durocher, Past President of IEEE Industry Application Society and Dr. Peter Magyar, Chair of the IAS Chapters and Membership Development (CMD) Department** handed many **awards** to several individuals for their special offer to IAS.

Our chapter received the award for *“Continued Performance Outstanding Student Branch Chapter”* at the Outstanding Chapter Award Contest, by Ms. Bouloukosta Eleni (left), Chair of DUTH IAS SB Chapter for 2016. In addition to this, Ms. Christina - Panagiota Malliou (right) received the *2016 IEEE Industry Applications Society Outstanding Young Member Service Award*.



At the end of this event, all the guests took **commemorative pictures with the members of the other chapters, with all the desire to have the opportunity to attend the next IAS Annual Meeting in Cincinnati, OH!!** ●



IEEE INTERNATIONAL CONFERENCE ON TEACHING, ASSESSMENT AND LEARNING FOR ENGINEERING (TALE) 2016

by Victoria Meskova, DUTh SB IAS Chapter Webmaster



The **IEEE International Conference on Teaching, Assessment and Learning for Engineering (TALE) 2016** took place in Bangkok Thailand, December 7-9. The venue chosen for the conference was Dusit Thani Bangkok Hotel, an impressive and luxury hotel with outstanding decoration and many rooms and halls for the convention. The aim of TALE 2016 was to provide **a forum for academicians and professionals**

from various educational fields and with cross-disciplinary interests to network, share knowledge and engage in dialogue around the theme of fostering innovation and excellence in engineering education.

My experience of the TALE 2016 was one of the best. I got to attend many sessions on interesting topics and took two workshops, the first one on AR Application Development for Learning Integration and the second on Software Defined Networking. About the sessions, there were four different paper presentations conducted at the same time in different halls and you could attend the most interesting



for you. One of the sessions was about **Assessment for Engineering** and had topics related to **new learning systems, increase of learning quality, e-Learning** and its **benefits and drawbacks**, development of **self-learning support systems** and **frameworks of lecture improvement**.

The second session was about **Learning for Engineering** and had relation to **teaching methods which put more emphasis on students' active participation in class known as active learning** and teachers' views on these methods. Another parallel session was about **Pedagogy for Engineering** and had references to **equal learning rights, massive open online courses on engineering and technology maximization**. Last but not least, **Teaching for Engineering** sessions were about **STEM fields and education, appreciation between technical skills and cultural heritage** and so on. All these issues were deeply analyzed and the point of view of the authors were explained and discussed during the presentations. **I really liked most of them and learned new methods and techniques in learning and absorbing the knowledge wisely.**

My favorite presentation was about STEM education - a curriculum based on the idea of educating students in four specific disciplines; science, technology, engineering and mathematics - and its importance and positive association with the development of both creative



and critical thinking among students, as it integrates the four disciplines into a cohesive learning paradigm based on real-world applications.

CONFERENCES

As I participate in a STEAM project in my hometown, where I teach children robotics and programming with LEGO robots, I found all these sessions really useful for my occupation. After the conference I could indulge in different methods and techniques and improve my performance in the class and get better results.

Furthermore, during the conference I had the chance to **meet new people and socialize**. I really enjoyed talking with recognized **young professors and intelligent students about new technologies, engineering and computing, comparing their ideas and point of views**.

The cultural part of the conference was really interesting, too. I had the chance to **taste traditional Thai food, see traditional dancers with fancy costumes performing on Gala Dinner and learn about Thai history from locals**.



All in all, conference IEEE TALE 2016 was a great place to learn a lot of thing about engineering, make new international contacts and friendships and have great time with other IEEE members. It was a great experience! ●



CONNECT YOURSELF

by Eleni Bouloukosta, DUTH SB IAS Chapter Chair

It's time to get connected!!!

This column in our magazine was created in order to get in touch with other IAS members all over the world. If we try to explain the reasons of the connection with other chapters, some of them are to exchange knowledge, enhance our professional network, meet new people and make new friends and of course travel and meet new cultures and mentalities.

Nowadays, technology is developing more and more rapidly. This results in a great variety of information that an engineer should gather, where he wants to be creative, competitive and keep himself thoroughly informed. The ultimate weapons that an engineer should own are communication and interaction with his peers.

Societies and organizations like IAS offer generously all the previous!!

Realizing how important is the co-operation between chapters we are about to organize the second R8 Mediterranean Student Branch Chapter Workshop.

This workshop will establish a strong network between active student groups, allowing them to strengthen their relations. This interaction will also help to motivate young students become active as volunteers.

So, we call all the invited students to write about their experience on the workshop and send a sort paragraph (approximately 150 - 200 words) in the link that follows:

bit.ly/ConnectYourself

Feel free to use the QR code instead of the above link!

Those paragraphs will be published on the next issue of our magazine DIPLOMA. You will find it in our webpage (iasxanthi.eng.duth.gr/)!



UNIVERSITY OF OVIEDO

SB IAS CHAPTER

by Guirguis Zaki Guirguis, UO-SBC Chair

The **UO IAS SBC inaugural meeting** was held on **September 26, 2016**, at the Polytechnic School of Engineering located in the beautiful city of Gijón, province of Asturias, Spain. The invited guests were **Prof. Dr. Georges Zissis, from the University of Toulouse, France, IAS Vice President, Dr. Peter Magyar, IAS CMD Chair and Prof. Juan Carlos Campo, Director of the UO School of Engineering.**

The celebration started with a speech by **Prof. Juan Carlos Campo** the director of the school, **encouraging the student activities in the Campus, and also welcoming the two special guests, Prof. Dr. Georges Zissis, the IAS Vice-President, and Dr. Peter Magyar IAS CMD Chair.** Followed by a presentation by Prof. Georges Zissis regarding the Industry Applications Society. **The presentation included the last IAS promoting video, which was very encouraging for the attendees.**



From left, Dr. Peter Magyar, Prof. Marcos Alonso, Prof. Juan Carlos Campo, Prof. Georges Zissis

Dr. Peter Magyar presented the **membership activities, grants, and numerical data concerning the membership gross all over the world.**

The **UO IAS SB chapter was formed by a kind invitation from Dr. Peter Magyar**, who discovered that there was not an IAS Student Branch Chapter in Spain; however he had contacts with Prof. Marcos Alonso in the University of Oviedo, Spain. As a response for the kind invitation the chapter was formed, **chaired by Mr. Guirguis Zaki Guirguis, and advised by Prof. Marcos Alonso.**



From left, Dr. Peter Magyar, Prof. Georges Zissis, Mr. Guirguis Zaki Guirguis

The day also included a **tour around the Campus to visit several research Groups laboratories** that have interests in the field of the Industry Applications Society. **The following research Groups; “Efficient Energy Conversion, Industrial Electronics and Lighting” research group (CE3I2), “Power Supply Systems” research group (SEA), “Electric Drives and Power Converters” research group (AECF), and “Laboratory for Electrical Energy Management Unified Research” research group (LE-**

MUR), had the opportunity to discuss and present their Projects to the IAS Executive Board represented by Prof. Georges and Dr. Peter. Also, **those research Groups had the opportunity to present their activities during the meeting to all the attendees.** The **Master Program on Electrical Energy Conversion and Power System (EECP)** was also presented during the meeting. This master program has been selected as **one of the best five master degrees in Spain.**



Laboratories Tour

GET CONNECTED

Finally the meeting was closed by a traditional **Spanish lunch**, in order to give the students the chance to **fraternize and meet our special guests**. Their presence gave a **good impact on the student's moral**, which is going to **influence for the good of the research, university, societies, and reflects as well on IEEE**.



Spanish Lunch

The event was organized **under the Supervision of Prof. Marcos Alonso**, with the help of **Mr. Guirguis Zaki Guirguis, SBC Chair, Mr. Jose Maria Cuartas, SBC Vice Chair, and Ms. María Martínez, SBC treasurer**. Thanks to the meeting the chapter got another volunteer **Ms. Maria Rodriguez, who has been appointed as SBC Event Organizer**. ●



Inaugural Meeting Family Picture

UNIVERSITY OF SHEFFIELD

SB IAS CHAPTER

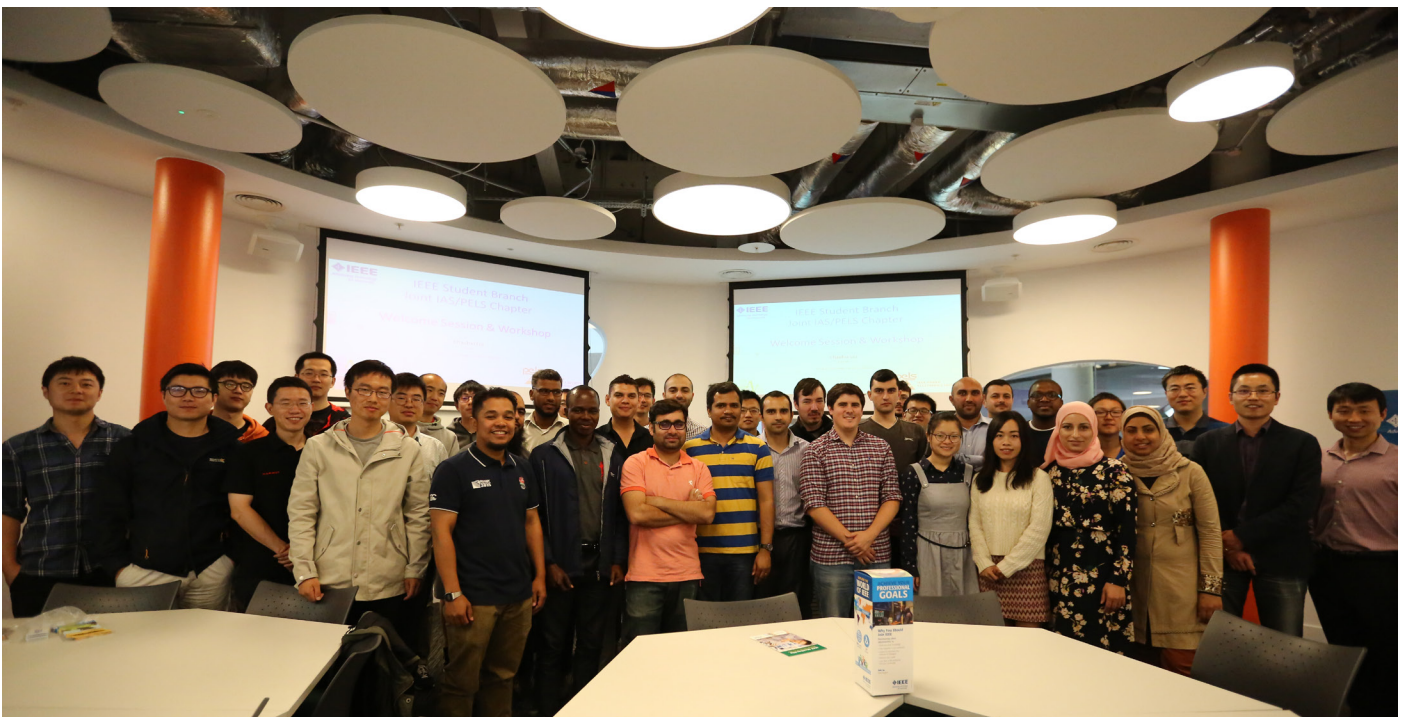
by Chaohui Liu, University of Sheffield SB Joint IAS/PELS Chapter Chair



The
University
Of
Sheffield.

IEEE Student Branch Joint IAS/PELS Chapter in the University of Sheffield, United Kingdom and Ireland Section, IEEE Region 8 (Europe, Middle East and Africa), was approved by IEEE, IEEE Industry Application Society (IAS) and IEEE Power Electronics Society (PELS) on 04/August 2016 as the **301st IAS Chapter in the world**. Currently there are **40 members including 7 Committee Officer**.

On 18th August 2016, the **first event Welcome Session** was held in the **Diamond Building, the newly launched library with multi-functional study area for Engineering faculty**. This was followed by the Committee Officer Election. After that, we organized a **Technical Publication Brain-Storm Workshop**, during which the **Chapter Advisor Dr. Guang-jin Li** (Lecturer in University of Sheffield) and the **Student Branch Counsellor Dr. Xiao Chen**



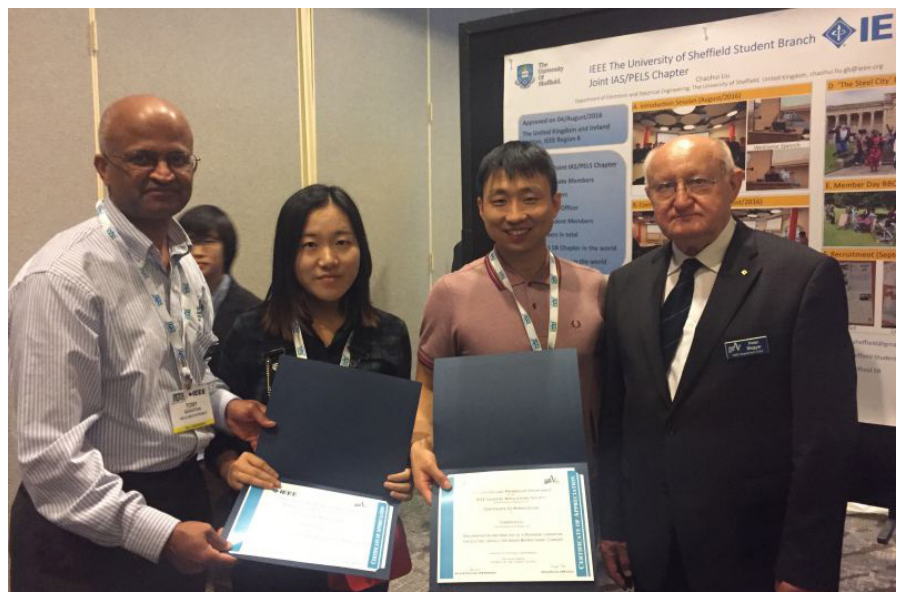
GET CONNECTED

(Research Associate in Electronic and Electrical Engineering, University of Sheffield) **shared the experience as a journal paper reviewer to around 30 attendees.**



We have organized **several social events**. On 21st August 2016, 20 members attended our social event **The Steel City- A Visit to Weston Bank Museum**. We also organised the **Member's Day Social BBQ Event**. More than 30 members with their families and friends enjoyed the BBQ in the beautiful Weston Park.

In October, **Chaohui Liu (Chapter Chair)** and **Yaoyang Liu (member)** were invited to attend the **IEEE Industry Application Society Annual Meeting in Portland, OR, USA**. The Chapter built **good connections with other Chapters** in the meeting. **The Chapter Chair Chaohui Liu was granted the Best Poster Award.**



On 26th October 2016, **Prof. Wen. L. Soong** from the **University of Adelaide** provided a seminar **Keys to Success in PhD Research** in the Lecture Theatre 7, Broad Lane Block. This event was **held by the Chapter and the Electrical Machines and Drives (EMD) Research Group at The University of Sheffield**. More than **50 PhD students and 3 PhD supervisors** attended this seminar. The Head of EMD group Prof. Zi-Qiang Zhu (IEEE Fellow, Royal Academy of Engineering Fellow/Siemens Research Chair) chaired the seminar. **During the seminar, the attendees had instructive conversations with Prof. Soong regarding on PhD research and thesis writing.**



The latest events and news are updated on our Facebook page (IEEE Sheffield Student Branch Joint Ias/Pels Chapter) and twitter (IEEE Sheffield Student Branch). We also send newsletters to our members and subscribers in the Engineering Faculty at the University of Sheffield.

We are working on networking with more Chapters around the world.

Please contact us: Chair, Chaohui Liu Chaohui.liu.gb@ieee.org and Advisor Guangjin Liu g.li@sheffield.ac.uk. ●

INSTITUTO SUPERIOR TÉCNICO SB IAS CHAPTER

by Andre Pires, IST IAS Student Chapter Chair



IEEE-IST
Student Branch | IAS

*Say Hi to IEEE-
IST IAS SBC!*

“A journey of a thousand miles starts with a single step” (quote by Lao Tzu), and IAS Student Branch Chapter (SBC), a technical sub-unit from IEEE-IST Student Branch, is at the beginning of its journey. **With a re-newed spirit and highly motivated members**, IAS SBC at Instituto Superior Técnico (IST) in Lisbon Portugal wants to **make an impact, increase the number of active elements and create a strong base for years to come**. Our motto is unanimous: **“think globally, act locally”**, which means that **our objectives are global**, but we also want to **organize various activities locally**.

Since September we already organised **3 activities - no time to rest!**

IEEE Outdoor day was the first outdoor activity for IEEE-IST and IAS SBC members since 2012, which included a **walking tour through Lisbon’s green areas and a visit to the Water Museum, Aqueduto das Águas Livres**. It was a great success and the participants’ opinions can prove that.





For the **IEEE-IST Week**, a week with various activities to promote and celebrate IEEE, organized by our Student Branch, we organized two activities: "Mexete" (in english, "move yourself"), a workshop about **Proactivity and Entrepreneurship**, and a talk "O Papel do IEEE na Industria" (in english, "The IEEE's role in the

industry"). The workshop was a short and a fun way to discuss how to make the most out of the time we have every day and how to make an impact/impression on everyone around us. The talk was focused on graduate students and industry professionals and provided a different perspective on how members can take advantage of IEEE's opportunities to develop a career in the industry. Lectured by **José Pedro Silva, IEEE-PT Section Vice-chair**, the feedback was extremely positive - participants enjoyed this relaxed and motivating event and seemed engaged to enrol the students in other IEEE's initiatives. We are organising for this year to visit a big tech company and a workshop more.

With this objectives and activities, we expect to promote the IAS in Portugal and motivate other student branches to open the IAS Chapter. ●





Xanthi has a great history, traditions and customs and is a spiritual-cultural center in the region.



It is also considered as a multicultural city and has been described as "Xanthi, a town with a thousand colors".



Famous in the city is the Carnival of Xanthi (take place every February) which is one of the most famous carnivals in Greece. The Carnival in Xanthi offers an unforgettable experience for all the visitors who are lucky enough to be there for this season.



As part of this famous carnival, numerous folk and cultural celebration take places all over the city. The festivities include concerts, theatre plays, music and dance nights, exhibitions and re-enactments of old customs. The highlight of the celebrations is the Great Carnival Parade. Thousands of masked revelers fill the streets of the city with music and colors to accompany the King of the Carnival. This celebrations ends with the ceremonial burning of the effigy of the King at the local river, Kossynthos.

