Message from the President of the ISAP Board of Directors

On behalf of the International Council of Intelligent System Applications to Power Systems, I would like to welcome you to ISAP 2011 in Hersonissos, Crete. ISAP is an international conference series that began in 1988 and has been held periodically throughout the world. ISAP has established itself as the leading forum for intelligent system technologies and their applications to power engineering.

Recent years has seen an explosion in interest in the so-called Smart Grid. The community that has supported ISAP for years will probably tell you that this is no new trend but the result of something we've been excited about and researching for 25 years. After all, the Smart Grid is really about what computers can do with the new sensing, communication and control technologies. This is exactly the theme of the ISAP conferences. Moreover, growing interest in more environmentally benign generation technologies poses great challenges for the grid. The high degree of intermittency and other unusual operating characteristics require ever more sophisticated intelligence embedded in the design, planning and operation of the power system. Thus, it is particularly appropriate to hold this conference here in Crete, where approximately 20% of the load is served by wind power annually.

We hope that you will enjoy the technical programs and all the activities during ISAP 2011. We are excited about the three distinguished keynote speeches and the technical visits to Linoperamata Test Station and Plastika Kritis Wind Park. But, let's not to forget enjoy ourselves at the social activities. Greece is certainly one of the most beautiful countries in the world and a destination for good food and entertainment.

I would like to take this opportunity to thank the Technical Committee and Local Organizing Committee for their dedication and outstanding work. I also wish to thank the ISAP council for their leadership and guidance for this important meeting. Together they have spent countless hours to ensure that we will have a high quality and enjoyable conference. Finally, but not least, I want to thank the authors and participants who bring new ideas and energy to the forum.

I look forward to meeting everyone at the conference.

Sincerely,

Kevin Tomsovic
ISAP President

Message from the ISAP 2011 General Chair

It is my great pleasure to welcome you to the 16th Intelligent Systems Application to Power Systems Conference (ISAP 2011). ISAP 2011 continues the tradition of the preceding conferences “Expert Systems Application to Power Systems (ESAP)” and “International Forum on Applications of Neural Network to Power Systems (ANNPS)”. The first integrated conference, ISAP'94 was held in Montpellier, France (1994). This was followed by 9 International events in (Orlando, Florida, USA, Seoul, Korea, Rio de Janeiro, Brazil, Budapest, Hungary Lemnos, Greece, Washington DC, USA Kaohsiung, Taiwan and Curitiba, Brazil This year the Conference is organized in Crete, Greece by the Electric Energy Systems Laboratory of the National Technical University of Athens and is technically sponsored by the IEEE/PES. It is held at the Creta Maris Hotel, in Hersonissos, Crete on the 25th to 28th of September 2011.

ISAP is traditionally dedicated to innovative solutions in the area of operation, control and planning of power systems, as well as their particular components. This year it focuses on renewable energy sources, distributed generation and smart grids. The requirement for more intelligent networks, in order to accommodate efficiently the ambitious targets of large shares of renewable and distributed generation, as well as responsive loads is now widely recognized. Artificial intelligence can provide invaluable support for the achievement of the goals of sustainability, efficiency and security and are expected to play an ever increasing role in the Power Systems of the future. The goals of the Conference are to provide a major forum for state-of-the-art presentations in novel, intelligent software technologies by international experts and to give the opportunity to power system engineers and scientists working in the area of intelligent systems to exchange information and experience and to promote collaboration with the Power Industry in the fields of intelligent system applications to Power Systems. The technical visits and social events organized within the Conference aim to create the suitable environment and ease the fruitful discussions within the dynamic society of Intelligent Power System Applications.

The Program includes 5 Key Note Speeches, 3 Panel Sessions and 16 paper sessions, organised in 3 parallel conference rooms. An overall number of approximately 100 papers will be presented at the Conference selected after a thorough review of their full texts by the Technical Committee. The five Key Note speeches provided by distinguished experts are entitled: “Wind Energy Development in Europe”, “Sustainable Electric Power Systems in the 21st Century: Requirements, Challenges, and the Role of Intelligence Systems”, “The three pillars of Smart Distribution realized by IEC 61850 communications”, “Complex Systems for an ICT -

enabled Energy System" and "Interconnection of Crete to the mainland Greece". The three Panel Sessions are devoted to "Wind Power Forecasting", "" and "Electrical Vehicles Integration" and "Active Houses and Smart Grids". The paper Sessions are devoted to the major developments in the Smart Grids area including RES Integration and Forecasting, Demand Side Management and Load Forecasting, Microgrids, Intelligent Control and Multi-Agent Systems, Intelligent Optimization, Intelligent Protection, Wide Area Measurement Systems, Stability and Security and Energy Markets.

ISAP2011 is the result of the strenuous efforts and contributions of many individuals. On behalf of the Conference Organizers, I wish to extend to each of them our appreciation and our warmest personal thanks. First of all, I wish to thank Prof. Kevin Tomsovic, President of ISAP, and Prof. Dagmar Niebur, Secretary and Treasurer of ISAP board of directors, for their support and constant help. I wish to thank all the members of the ISAP Board of Directors and all the members of the Technical Committee for their fruitful suggestions and help during the last years. My deepest gratitude is due to the Reviewers, the Keynote Speakers, the Authors, the Organisers of the Special Sessions and the tutorials and the Session Chairpersons. My warmest personal thanks are due to the Local Organising Committee and especially its chair Dr. Manolis Voumvoulakis and Dr I. Vitellas, Dr. E. Thalassinakis and Ms A. Gigantidou. Special thanks are due to our Secretariat, in particular to Ms. E. Avlonitou and Ms F. Koutsogianni for their efficient work. We are most grateful to our golden sponsor, the Public Power Corporation of Greece for its financial support in these difficult times. Finally, I would like to thank all of you for your interest in ISAP2011 and wish you a fruitful Conference and an enjoyable time in the beautiful island of Crete.

September 2011

Nikos Hatziargyriou
ISAP2011 Conference Chair

Conference Chair

Chair: **N. Hatziargyriou** (Greece)

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Local Organising Committee

Chair	**E. Voumvoulakis**	(Greece)
Members	**A. Gigantidou**	(Greece)
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	G. Sideratos	(Greece)
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	A. Tsikalakis	(Greece)
	I. Vitellas	(Greece)

1. General Theme

The 16th ISAP2011 “Intelligent Systems Application to Power Systems” continues the tradition of preceding conferences on topics selected since “Expert Systems Application to Power Systems” (ESAP) in 1998 and “International Forum on Applications of Neural Network to Power Systems” (ANNPS). It is specifically dedicated to discuss innovative solutions in the area of operation, control, planning and maintenance of large interconnected but also isolated or weakly interconnected power systems, as well as their particular components. ISAP 2011 focuses on power systems operating in competitive environment, renewable energy and distributed generation, but also other subjects of interest in modern power systems. Employment of novel software technologies and other are in the special scope of the conference, but also intelligent approaches achieved with conventional programming are sought for. Proposed subjects should be beyond the phase of declarations of interest or presentations of ideas; papers reporting practical realization and application will have priority.

2. Scope

The Conference includes sessions on intelligent systems application to Electric Power and Energy Systems (Generation, Transmission, Distribution, Markets, Operations, and Planning) with preference to:

Modern Grid Operation and Control

- Smart grids
- Automated metering applications
- Demand-side participation and response
- Isolated and weakly interconnected power systems
- Microgrids and small island systems
- Self-healing grids
- Wide area system monitoring and control
- Fault diagnostics
- Protection

Electric Power and Energy System Analysis, Uncertainty and Risk Assessment

- Power system security, reliability and adequacy
- Power system economics and pricing
- Load and price forecasting and estimation
- Grid integration of renewables including solar and wind
- Vehicle to grid integration
- Complex interactive cyber-physical systems

based on Intelligent System Techniques including but not limited to:

- Hybrid Intelligent Systems,
- Combinatorial & Numerical Optimization,
- Multi-Agent Systems,
- Computational Neuroscience,
- Fuzzy-Neuro-Evolutionary Hybrids,
- Game Theory,
- Particle Swarm and Other Heuristic Optimization Techniques,
- Evolutionary Intelligent Agents,
- Ant Colonies & Immune Systems,
- Molecular & Quantum Computing.

3. Location

The 16th ISAP2011 Conference is held in Crete, an island characterized by high wind power penetration (approx. 20% annually), where a pilot control center based on intelligent techniques was installed. The Conference will provide opportunities for tutorials and technical visits including:

- **The Insulator Testing Center of Public Power Corporation**
- **The Wind Park of Plastika Kritis**

3.1. Crete: Getting to know the Island

The lowest end of Greece and Europe. The birthplace of civilization all around the world. Fact: Crete is a feast for the eyes. It's also the largest of all the Greek islands, with 1,100km of coastline and around 600,000 inhabitants. Here is another fact: its colour and spirit will stay with you long after your visit. Celebrated for its warm climate and diverse, natural beauty, Crete also has a unique cultural and historical heritage that's world-famous.

The island is peppered with man made marvels: Venetian fortresses beautifully preserved old towns, ancient monasteries and Byzantine churches. But Mother Nature got there first. This is a land of breath-taking mountain ranges, deep gorges (the best known of which is Samaria gorge), long sandy beaches and deep blue seas, and a landscape filled with over 100 different species of flowers and plants. And apart from the flora there is some eye-catching fauna: a rare species of wild goat, for instance, called kri-kri. It is an island that has everything. High mountains (Psiloritis, Lefka Ori, Dikti), beautiful

beaches washed by the Cretan and Libyan Sea. Fertile grounds where, the famous Cretan citrus fruits are cultivated. The endless olive groves produce the fine Cretan olive oil, while also known is the Cretan wine from the island's vineyards. Cretan life is special. Its people are convivial and passionate, embracing every aspect of life, traditional and modern. Its cuisine is deliciously healthy the ultimate life-affirming Mediterranean diet and its culture are rich and varied, from painting, literature and dance to the music of mandolin and lyre. Everywhere you turn your sight; you will see historic monuments that reveal the island's history.

Crete was formed millions of years ago when Aegis – the land that joined Greece to Asia Minor – sank into the Mediterranean. Only the peaks of its mountains remained above the surface, which became Crete and its surrounding islands. Thanks to its location, Crete has been a crossroads for several civilizations. From 2000 BC onwards, the Minoan Civilization built 100 cities here, and remains have been found from the Ancient Greek and Roman periods, the early Christian era, the Byzantine Empire, the Venetian rule, and the Ottoman occupation, as well as, the trappings of modern Greek civilization.

3.2. Contemporary Crete and Iraklio (Heraklion) – Travel Tips!

The current population of Crete is approximately 600,000 people. The majority of its inhabitants live in the four main towns on the island, Hania, Rethymno, Agios Nikolaos and Iraklio (Heraklion), which is the biggest of the towns. The remainder of the population is located in the smaller towns and scattered fishing villages. For administrative purposes, the island was divided into four prefectures. The famous tourist resort of Hersonissos is within walking distance of the hotels. Iraklio (Heraklion), which has been a settlement from as far back as the Neolithic era, served as the port of Knossos under the Venetian rule in the 13th century and became known as Candia, the capital of Aegean Territories. Today the island's capital harbour is a wealth of Venetian architecture, including its city walls and Fortress (Koule). The Archaeological Museum holds the largest collection of Minoan Art in the world and access to the sites of the Minoan Palaces of Knossos, Phaistos, Gortyna and Malia, which are not far from Iraklio (Heraklion). We highly recommend a visit to both Knossos and Phaistos. Knossos is the site of the ruins of the largest and most luxurious Minoan palace, originally built in the middle of a glorious town. The first palace was built around 2000 BC and destroyed around 1700 BC. The second, which was built immediately afterwards, was also destroyed around 1450 BC, most probably by the effects of the violent eruption of the volcano of Santorini. Phaistos is best Known as the site of the mythical palace of Radamanthys, the brother of Minos. As this palace was also built twice, it is mainly the ruins of the second palace that visitor can still see today.

The city of Iraklio (Heraklion) has a number of other museums in addition to the Archaeological Museum. The Historical Museum traces the history of Crete from early Christian times and the 16th century Venetian church of Aghia Irini, famous as a centre of Art and Literature, now houses the Museum of Religious Art, and houses a magnificent collection of Byzantine icons. Traditional Cretan life is recreated at the open-air museum at Lychnostatis in Hersonissos – the most popular holiday resort in the Iraklio (Heraklion) region where exhibits include a windmill, a stone house and a gallery. In this village visitors can also explore the fascinating Museum of Cretan Ethnology. In the heart of Iraklio (Heraklion) the ornate 17th century Morozini Fountain, the 17th century Loggia, the 16th century church of Aghios Titos and the town's Aghios Minas cathedral should not be missed. Apart from this, the region around Iraklio (Heraklion) is

blessed with a beautiful surrounding countryside. Places to visit are Zaros, a surprisingly green oasis famous for its clear spring water and Matala, an idyllic sweeping bay with pitted sandstone cliffs looming dramatically over the beach. Along the coast north of Iraklio (Heraklion) is Fodele, a small village at the top of a steep cliff which claims to be the birthplace of the world famous painter El Greco. His house lies above the village's Byzantine church. For visitors looking for livelier holiday, Hersonissos, Gouves and Malia on the northeast coast are the ideal places for exciting nightlife. Visit the centre of European civilization, Visit Iraklio (Heraklion)!!! Wherever you are on Crete you will be able to enjoy Crete's history, admire its beauty and, of course, meet Cretan people. The people of Crete have safeguarded their traditions carefully. Their traditions have been kept alive and expressed in many forms right up to modern times. They are also people with a strong religious awareness, as well as being direct, honest and extremely hospitable. This is the glorious island of Crete, the island of a proud and friendly people

3.3. Museums in Crete

- **Museums in Heraklion**

Heraklion Historical Museum

Tel.: (2810) 28.32.19
Exhibits from the Byzantine, Venetian and Turkish periods and historical documents of more recent Cretan history. Also a rich collection of folk art consisting of local costumes, textiles, woodcarvings and embroidery as well as a representation of a typical Cretan house

St Catherine of Sinai

Monday – Friday: 10.00-13.00
The preserved katholikon of the Monastery and the chapel of Agioi Deka today house a collection of representative works of the Cretan Byzantine and post-Byzantine art.

Archanes Archaeological Collection. Contains finds from the Malia palace, the Fourni cemetery, and the sanctuary at Anemospilia dating from the Minoan era

Lychnostatis Museum in Hersonissos

From 1 April until 31 October

daily: 09:00-14:00

Saturday: closed
The museum has its origins in a private collection formed over a period of thirty years by Giorgos Markakis, professor of ophthalmology, lecturer and writer. The buildings themselves are some of the main exhibits. Built thoroughly with the prevalent raw materials (stone-wood-clay), under the creative architectural improvising of the founder, they possess an aesthetic quality unique in the area. The collections are broad in scope, from agricultural implements to embroideries and from herbs to rhymes.

Natural History Museum in Heraklion

daily: 09:00-16:00

Weekends: 10:00-16:00

Natural History Museum of Crete has been functioning and operates under the framework of the University of Crete since 1980, being a pioneer institute at national and European level in the following activities:

- Study and Management of the Natural Environment of Crete
- Public awareness, education and sensitisation of local people as well as the visitors of the area
- Link University activities with Cretan society
- Set up a network of Ecological Museums in Greece and throughout the Eastern Mediterranean

➢ Museums in Chania

Chania Archaeological Museum

Tel.: (28210) 90.334
Housed in the Venetian church of San Francesco. Its exhibits from western Crete and other areas date from the Neolithic to the Roman era, and include idols, statues, inscriptions, weapons, pottery, seal stones, coins, jewellery, etc.

Historical Archives of Crete

Tel.: (28210) 52.606
(open daily 8-13.00 except Saturdays, Sundays and public holidays). A rich collection of folklore and material related to the history of the island. The archives are among the largest in the country, second only to General Archives of the Greek State.

Naval Museum of Crete

Tel.: (28210) 91.875
On the mole of the Venetian Harbour. Exhibits linked with the island's history

- **Museums in Rethymnon**

Archaeological Museum

Tel.: (28310) 54.668
The Venetian loggia is a museum containing interesting archaeological finds from the region as well as a fine coin collection.

Historical and Folk Art Museum

Tel: (28310) 23.398
The Museum's collections include over 5.000 items that come from donations, purchases and loans. They are displayed in units; Folk Art collections include weaving, basket weaving, embroidery-laces, costumes, ceramics, metal work, traditional cultivations, traditional occupations, while the historical ones include documents, photographs, maps, weapons, banners and coins.

- **Museums in Lassithi**

Aghios Nikolaos Archaeological Museum

(28410) 22.462
Archaeological Museum. It contains finds from excavations in eastern Crete.

Ierapetra

Archaeological Collection. Contains marble statues and inscriptions from the Greek-Roman era

Sitia
Archaeological Museum. Contains finds from Sitia, Zakros, Petra, and Palekastro from the Minoan era.

4. Conference Venue

The Conference will be held at the Creta Maris Conference Center of the Creta Maris Hotel, Hersonissos, Crete, Greece,. Phone : +30-2897027110, Fax : +30-2897027119
e-mail : maris@maris.gr, reserv@maris.gr, webpage : www.maris.gr

4.1. Location

The hotel is situated in the seaside resort of Hersonissos, a picturesque town in northern Crete. Hersonissos offers many accommodation options, two sandy beaches, traditional and international cuisine restaurants, souvenir shops and a famous nightlife. It is situated 26 km east of Heraklion. Heraklion is the largest city of the island of Crete and one of the Mediterranean region's most fascinating and vibrant cities. The city is also the commercial and technological centre of the island. It offers a wealth of museums, a summer-long arts festival, historical sightseeing, amazing nightlife and events throughout the year.

Creta Maris hotel in Crete, just 24 klms from the Heraklion International Airport is close to the fishing village of Hersonnisos, a long sweeping bay of sandy beach and crystal clear water. Creta Maris, a small village with quaint twisting paths, small piazzas filled with the scents and colours of a wide variety of trees and flowers, is a unique combination of Aegean Architecture and luxurious facilities. At Creta Maris, the choices for fun, entertainment, sport activities, water-sports, but also relaxation, exercising and beauty are endless.

4.2. Accommodation

The impressive suites, the luxury rooms and bungalows of the Creta Maris, can accommodate 1068 clients. All rooms are equipped with all necessary comforts and offer either a garden or veranda. Creta Maris has 534 rooms, 215 of which are bungalows.

4.3 Guest Services

At Creta Maris, the choices for every hour of the day are endless and cover every need. Besides the athletic and entertainment activities, the restaurants and bars, you also have at your disposal spacious lounges to relax, blooming gardens for a little stroll, bridge corners, TV, cinema, hair salon, medical room, business center, Internet services, car rental, foreign exchange, theatre, art gallery, church, and helipad.

For relaxation and rejuvenation of body and mind, visit “SPA Center”, experience the unique experience of total relaxation and take advantage of the rich properties of sea water. You can also enjoy relaxation and well being at the Thalassotherapy centre where the main object is to make you feel better than ever before.

5. Dates

Important dates to remember are:

September 25– (evening)	♦ Registration
	♦ Welcome Cocktail
September 26 – (morning)	♦ Registration
	♦ Opening Speech
	♦ Keynote Speeches
– (night)	♦ Official Dinner and entertainment programme
September 27 – (morning)	♦ Keynote Speeches
- (evening)	♦ Tour: Knossos Archeological Site
	♦ Technical Visit: Tour of Linoperamata Test Station
- (night)	♦ Dinner at Rogdia village
September 28 – (morning)	♦ Keynote Speech
12. (evening)	♦ Technical Visit: Plastika Kritis Wind Park
	♦ Visit to Plaka Village

6. Events

6.1. Conference Welcome Cocktail

A Welcome Cocktail will take place on Sunday, September 25, 2011 at 20.00 at the Veranda of the Main Bar of the Creta Maris Hotel.

6.2. Official Dinner and Entertainment Program

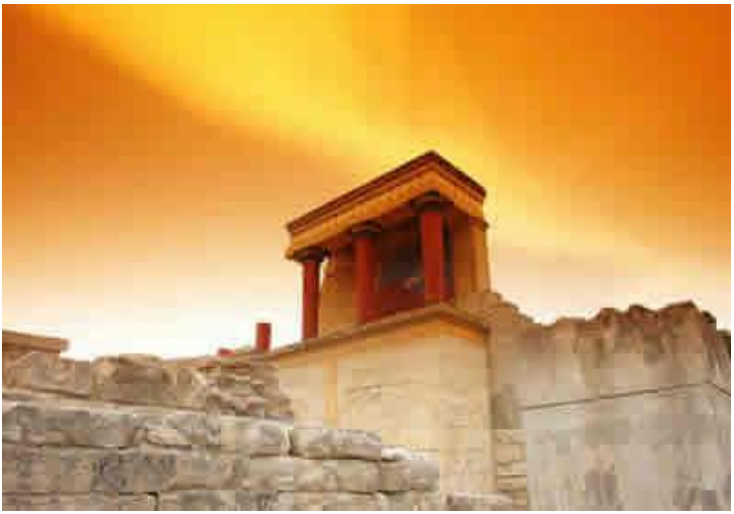
An Official Dinner will be held on Monday, September 26, 2011 at 19.30. The event will take place at Traditional Tavern “Anopolis” in Anopolis Village. The menu will consist of Crete and Greece specialties. There will also be live entertainment with Crete, Greek and international music and dances.

6.3 Dinner in Rogdia Village

In Tuesday September 27, 2011 a Dinner at Rogdia Village, is organized. Rogdia village has a panoramic view of Heraklion.

6.4 Archeological Tour in Knossos

Tour in Knossos Archeological Site is organized on Tuesday, September 27, 2011 at 16.00. Transportation, entry fee and guided tour are free of charge.



Knossos is located 5 km. east of Heraklion. Inhabited since the Neolithic era. The first palace of Knossos was built around 1900 B.C. Two hundred years later it was destroyed by an earthquake and rebuilt, becoming grander and more luxurious. The final catastrophe occurred about 1500-1400 B.C., according to one theory, with the eruption of the volcano in Santorini. Despite this blow, people continued to live there for another fifty years, until a fire swept through the city circa 1400 B.C. The Minoan palaces were not only the residence of the ruling house, they were also administrative and religious centers for the whole region. The ruins of the capital of the Minoan Kingdom include the palace of Minos, the homes of the officials and priests who surrounded him (Little Palace, Caravanserai, House of the Frescoes, etc.), the homes of ordinary people and the cemetery. The palace was a labyrinthine complex built around a central court. This multistoried construction covered an area of 22.000 sq.m. and, in addition to the royal quarters, also contained places of worship, treasuries, workshops and storerooms.

6.5 Visit to Plaka Village

On Wednesday September 28, 2011 a visit to Plaka Village, is organized. Across of Plaka one can see the Spinalonga island. Spinalonga is an islet at the entrance of the Elounta bay. In antiquity there was a fortress of the Olounites. In 1579 the Venetians built a mighty fortress there, which remained under their rule even after the Ottoman occupation of Crete in 1669. During the last years of the Ottoman occupation, it was a safe refuge of Ottoman families. In 1903, by law of the Cretan government, it was appointed as the place of stay for the lepers of Crete.

6.6. Technical Visits

- **Tour of Linoperamata Test Station presented by Public Power Corporation**

A tour in Linoperamata Test Station, is organized on Tuesday, 27 September 2011, at 18.30

- **Plastika Kritis Wind Park**

A technical visit to Plastika Kritis Wind Park is organized in Wednesday, September 28, 2011 at 17.00 (after the visit to Plaka village). **PLASTIKA KRITIS** owns and operates a 12 MW Wind Park in Crete that produces green energy. With 14 x 0,85 MW Vestas turbines, the Park produces approximately 40,000,000 kWh of electricity per.

Apart from demonstrating the company's environmental consciousness, this project contributes to reducing the island's cost for electricity as well as its dependence on oil. At the same time, it is a profitable investment for PLASTIKA KRITIS and a hedging towards any future increase of energy cost .In 2010 the company has established in Crete 3 Photovoltaic units of 80 KW each.

6.7. Accompanying Persons Tours

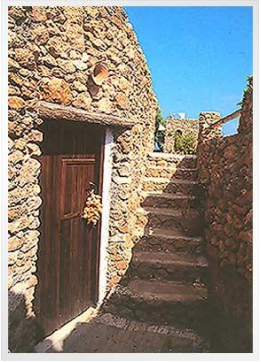
A tour will be held for accompanying persons on Monday 9:00 am to 14 p.m. This tour includes a visit to Lychnostatis museum of folklore http://www.lychnostatis.gr/, Archanes traditional village, and Boutari local winery (Fantaxometocho) http://www.boutari.gr/?TGVmdE1lbnU9NiwxMCZMQU5HPUVOJlBhZ2VJZD04

Transportation, guided tour and entry fees to museum and winery are free of charge.

- **Lychnostatis Museum**

The Cretan Open-air Museum 'LYCHNOSTATIS ' aims to promote the understanding and awareness of the Cretan folk cultural heritage. Its scope lies on the following themes :

- Cretan Folk Tradition and Ethnology life-style in the pre-industrial Crete (19^{th} – 20^{th} century), traditional occupations and customs , living legends, ethnological information e.t.c.
- Cretan Nature and Environment, vegetation , mineral wealth, environmental administrative process
- Cretan Folk Culture, self – taught artists who promote the folk cultural heritage with their artistic work



The museum comprises the following buildings and locations:

- Traditional Dwellings (a farmer's house and a merchant's house)
- Chapel
- Windmill
- Olive oil – press
- Wine-press
- Distillery for ' raki ' (alcoholic beverage)
- Threshing – floor
- Shepherd's shelter
- Ceramic workshop
- Weaving and plant-dying workshop
- Herbarium
- Garden with Cretan fruit – trees
- Herb – garden
- Flora and cactus – garden
- Mineral and stone exhibition
- Cretan folk artists' gallery
- Auditorium [150 seats] for audio-visual shows , seminars , e.t.c.

- Open-air theatre [250 seats] for cultural and artistic events
- Library stocked with books and periodicals on Cretan folk culture ((where typical beverages and sweets are served)
- Museum-shop (where mementoes and products of the museum are sold).

➢ Boutari Winery

The new, Boutari Winery in Crete was completed in early 2004 and is one of the best-equipped, state of the art wineries in Europe. Visitors can enjoy a tour of the cellar, the production area, and the rest of the estate and they can enjoy the impressive multimedia show which has gained major awards at international competitions.

The Boutari Winery in Crete is built outside Skalani village, on the Fantaxometocho Estate. It is located a few kilometers outside the centre of Heraklion city, close to the archaeological site of Knossos, and is the jewel of the viticultural VQPRD zone of Archanes. The planting of the southernmost privately-owned Boutari vineyards began in 1990.

References in bibliographies confirm the close relations of the region with viticulture and the production of wine in antiquity. It is worth noting that the discovery of the first grape press in the Vathypetro area, dates back to 1600 B.C.

7. Official Language

The official language of the Conference is English. All papers are written in English and the Proceedings (CD) are published in English.

8. Proceedings

Each participant will receive a USB containing the complete text of the papers presented at the Conference. Additional copies will be on sale during and after the Conference.

9. Technical Programme

The Technical Program includes 16 paper sessions, organized in 3 parallel conference rooms. Each session includes 5 to 7 oral presentations of papers allowing time for discussion. The Program also includes 5 Key Note Speeches and 3 Panel Sessions. Coffee breaks will take place between sessions as marked in the Conference Program. A concise time-table of the Program is provided in middle pages of this leaflet.

10. Registration

Registration will commence on Sunday, September 25, 2011 and last from 16.00 to 20.00. Registration can also be made on Monday September 26, 2011 from 08.00 to 09.00 or daily during the conference hours at the Registration Desk operating at the Lobby of the Conference Venue". A name badge will be provided for each delegate, which will authorize access to sessions and other events. A hospitality Desk for all registered Accompanying Persons will be available during the Conference to their assistance.

10.1. Delegates

The registration fees per participant on site are as follows:

IEEE members:	550 Euros
Non-IEEE members:	600 Euros

The registration fees include:

- Attendance of Opening session, Keynote Speeches and Technical sessions
- One copy of the Conference Proceedings (CD)
- Participation to the Welcome Cocktail

- Participation to the Official Dinner and to a Dinner at Rogdia Village
- Participation to the Tours in Knossos Archeological Site* and in Plaka village
- Participation to the Technical Visits in Linoperamata Test Station and in Plastika Kritis Wind Park
- Light Snacks during the Conference (3)
- Coffee, tea, etc., at marked Coffee Breaks
- Conference Bag.

(*) Transportation, guided tour and entry fee to Knossos are free of charge.

10.2. Students

The registration fees per student is 350€ and include:

- Attendance of Opening session, Keynote Speeches and Technical sessions
- One copy of the Conference Proceedings (CD)
- Participation to the Welcome Cocktail
- Participation to the Official Dinner and to a Dinner at Rogdia Village
- Participation to the Tours in Knossos Archeological Site* and in Plaka village
- Participation to the Technical Visits in Linoperamata Test Station and in Plastika Kritis Wind Park
- Light Snacks during the Conference (3)
- Coffee, tea, etc., at marked Coffee Breaks
- Conference Bag.

(*) Transportation, guided tour and entry fee to Knossos are free of charge.

10.3. Accompanying Persons

The registration fees for each accompanying person is 190 Euros.

The registration fees include:

- Participation to the Welcome Cocktail
- Participation to the Official Dinner and to a Dinner at Rogdia Village
- Participation to the Archeological Tours in Knossos* and Plaka village
- Visit to Lychnostatis Museum of Folklore*
- Visit to Archanes Traditional Village*
- Visit to Boutari local Winery*
- Light Snacks during the Conference (3)
- Coffee, tea, etc., at marked Coffee Breaks

(*) Transportation, guided tour and entry fees to Knossos, to Lychnostatis Museum and to Winery are free of charge.

11. Hotel Accommodation

Creta Maris Hotel	Single room	Double room
(Daily Hotel Rates per room, including buffet breakfast and taxes).	95 €	115 €

In case you need help to arrange hotel booking in Athens you can contact Mr Kavadias at **ERA Ltd** 8 Alexandrou Soutsou str., GR-106 71 Athens, Greece. Phone: +30210-3634944, +30210-3632 , Fax: +30210-3631690, e-mail: info@era.gr.

12. Useful Information

Crete Airports: There are five airports in Crete but only three of them are used for passenger flights: the **Heraklion airport**, the **Chania airport** in Akrotiri and the Sitia airport. The airports of Kastelli and Timbaki are military airports.

Crete Harbours: In Crete there are two main harbours: the **Heraklion harbour** and the Souda Bay harbour. The harbours in Rethymnon, Agios Nikolaos and Sitia are much smaller. Along the south coast there are various fishing ports.

12.1 Transport

Mainland Greece – Crete (and vice versa)

There are many ways to reach Crete island:

- **By Air**

One way is to fly to Athens, (served by international flights) and then fly to Crete or during the summer with charter flights from Europe directly to Crete. By air, there are domestic scheduled flights to Crete's airports daily from Athens.

- **By Ferry from Italy**

Another way is to arrive in Greece by ferry from Brindisi, Ancona, Bari or Venice in Italy and from there travel to Crete either by airplane or by boat.

- **By Sea**

By boat, ferries to Crete depart from Piraeus harbour (main port of Athens), but there are also departures from Thessaloniki, Rhodes, Kalamata, Gythio, and some from the Cyclades islands and Kythira. To arrive in Crete by boat you can reach one of the six ports which are located at Heraklion, Chania, Rethymno, Ag. Nikolaos, Sitia and Kastelli-Kissamou. Crete connects through these ports with Piraeus, Santorini, Sikinos, Folegandros, Milos, Sifnos, Paros, Naxos, Thessaloniki, Rhodes, Karpathos, Kassos, Karpathos, Antikythira, Kythira and the Peloponnese.

NOTE: Ferry schedules and destinations can change according to the ferry companies and the weather conditions.

In case you need help to arrange Transportation from Athens to Crete island and return you can contact Mr Costas Kavadias at **ERA Ltd** 8 Alexandrou Soutsou str., GR-106 71 Athens, Greece. Phone: +30210-3634944, +30210-3632 , Fax: +30210-3631690, e-mail: info@era.gr.

12.2 Athens Airport

The Athens International Airport “Eleftherios Venizelos” in Spata is located 27 km southeastern of Athens.

➢ By Bus

To reach Athens or Piraeus port by bus, three public bus routes serving exclusively the airport, can be used:

1. X96 Piraeus – Athens Airport Express:
   Serves different areas in Athens and stops at Pireaus port.
2. X94 Ethniki Amina – Athens Airport Express:
   Connects the airport and the Ethniki Amyna – Metro Station. Then, the Metro system can be used to different sites in Athens and Pireaus port.
3. X95 Syntagma – Athens Airport Express (start: Amalias, Othonos ave.):Connects the airport and Syntagma square (Athens city center) on a 24 hour basis.

The ticket price for the airport express line is 5 €. It allows unlimited travel by all transport modes (bus, trolley bus, metro) for 24 hours from the time of its validation at the beginning of the first trip (validate only once). The 24-hour ticket can be purchased from the drivers of the airport buses, at all metro stations and at the blue or yellow ticket kiosks of the Athens Public Transportation Network.

➢ By Metro

The airport is accessible via Metro Line 3 “Egaleo – Athens International Airport”, Line 2 “Aghios Dimitrios – Syntagma” and ISAP Line 1.

Single-trip tickets to or from the AIRPORT valid in Lines 1, 2, 3.

- 90-min ticket valid for one trip (Fare: 8,00€)
  starting from any station of ISAP Line 1 and/or METRO Lines 2 & 3 to the Airport or visa versa,

  ticket covering transfer to all other Mass Transit Modes with interchange to Line 1,2,3 stations.

- 90-min group ticket for two (2) persons ticket valid for one trip (Fare: 14,00€)
  starting from any station of ISAP Line 1 and/or METRO Lines 2 & 3 to the Airport or visa versa, ticket covering transfer to all other Mass Transit Modes with interchange to Line 1,2,3 stations.

Airport Routes

Line 3 AIRPORT SERVICE (via PALLINI, PEANIA – KANTZA and KOROPI Stations)

Journeys to / from the AIRPORT via PALLINI, PEANIA – KANTZA and KOROPI Stations **are scheduled every 30' seven days a week.**

DIRECTION TO THE AIRPORT					
TRAIN DEPARTURES FROM STATION	**TIMETABLE**				**TRIP DURATION FROM STATION TO THE AIRPORT***
	1st	**2nd**	***EVERY HOUR BETWEEN 06 UNTIL 22***	**LAST**	
EGALEO	05:30	05:55	*at 25' and 55'*	22:55	48'
ELEONAS	05:31	05:57	*at 27' and 57'*	22:57	46'
KERAMEIKOS	05:34	05:59	*at 29' and 59'*	22:59	44'
MONASTIRAKI	05:36	06:01	*at 31' and 01'*	23:01	42'
SYNTAGMA	05:37	06:03	*at 33' and 03'*	23:03	40'
EVANGELISMOS	05:38	06:04	*at 34' and 04'*	23:04	38'
MEGARO MOUSSIKIS	05:40	06:06	*at 36' and 06'*	23:06	37'
AMBELOKIPI	05:42	06:08	*at 38' and 08'*	23:08	35'
PANORMOU	05:44	06:10	*at 40' and 10'*	23:10	33'
KATEHAKI	05:46	06:12	*at 42' and 12'*	23:12	31'
ETHNIKI AMYNA	05:48	06:13	*at 43' and 13'*	23:13	30'
HOLARGOS	05:50	06:15	*at 45' and 15'*	23:15	27'
NOMISMATOKOPIO	05:51	06:17	*at 47' and17'*	23:17	26'
AGHIA PARASKEVI	05:53	06:19	*at 49' and 19'*	23:19	25'
HALANDRI	05:55	06:20	*at 50' and 20'*	23:20	23'
DOUKISSIS	05:57	06:22	*at 52' and 22'*	23:22	21'

PLAKENTIAS					
PALLINI	06:01	06:30	*at 00' and 30'*	23:30	13'
PEANIA – KANTZA	06:03	06:32	*at 02' and 32'*	23:32	11'
KOROPI	06:09	06:38	*at 08' and 38'*	23:38	5'
ARRIVAL AT THE AIRPORT	06:18	06:44	*at 14' and 44'*	23:44	0'

DIRECTION TO EGALEO STATION				
TRAIN DEPARTURES FROM STATION	**TIMETABLE**			**TRIP DURATION FROM THE AIRPORT TO STATION** *
	1st	***EVERY HOUR BETWEEN 07 UNTIL 23***	**LAST**	
AIRPORT	06:33	*at 03' and 33'*	23:33	0'
KOROPI	06:38	*at 08' and 38'*	23:38	5'
PEANIA – KANTZA	06:44	*at 14' and 44'*	23:44	11'
PALLINI	06:46	*at 16' and 46'*	23:46	13'
DOUKISSIS PLAKENTIAS	06:52	*at 22' and 52'*	23:52	21'
HALANDRI	06:54	*at 24' and 54'*	23:54	23'
AGHIA PARASKEVI	06:56	*at 26' and 56'*	23:56	25'
NOMISMATOKOPIO	06:57	*at 27' and 57'*	23:57	26'
HOLARGOS	06:59	*at 29' and 59'*	23:59	27'
ETHNIKI AMYNA	07:01	*at 31' and 01'*	00:01	30'
KATEHAKI	07:02	*at 32' and 02'*	00:02	31'
PANORMOU	07:05	*at 35' and 05'*	00:05	33'
AMBELOKIPI	07:07	*at 37' and 07'*	00:07	35'
MEGARO MOUSSIKIS	07:09	*at 39' and 09'*	00:09	37'
EVANGELISMOS	07:10	*at 40' and 10'*	00:10	38'
SYNTAGMA	07:13	*at 43' and 13'*	00:13	40'

MONASTIRAKI	07:14	*at 44' and 14'*	00:14	42'
KERAMEIKOS	07:16	*at 46' and 16'*	00:16	44'
ELEONAS	07:19	*at 49' and 19'*	00:19	46'
ARRIVAL AT EGALEO STATION	07:21	*at 51' and 21'*	00:21	48'

Further information about airport express lines can be found at http://www.aia.gr.

To reach Athens or Pireaus port by Taxi the trip will take approximately 1 hour and a half depending on the traffic. The cost of the ride is approximately to 30-40€ (day) and 50-60€ (night) per way.

12.3. Banking – Currency – Credit Cards

The official currency of Greece is the Euro. Currency rates are listed outside banks. Banking hours are: Monday-Thursday 08.00 – 14.30, Friday 08.00 – 14.00. Some bank offices and private booths for Currency Exchange are open all day. All major Credit Cards are accepted in hotels, restaurants and shops which display the symbol of each card.

12.4. Shopping

Shops work mainly from 08.30 – 14.30 and 17.00 – 22.00. Some shops are open all day long including Sunday. Products vary from all types of souvenirs, to gold and other jewellery, ceramics, traditional handmade laces and rugs. The Distinct local products include the renewed wine and ouzo, the sheep's cheese, the traditional pasta, the pure thyme honey as well as the fresh fish and meat.

12.5. Car Rental

All major Car Rental firms have facilities in Crete. Please contact MEGARENT (phone 0030 281 0225972 – 0030 694 6472424, Website: www.megarent.gr), TRAFFIC Rental Cars (phone – Heraklion: 0030 2810 370118, phone-Hersonissos: 0030 28970 24427, Website: http://www.traffic-rental-cars-crete.com/)

12.6. Power Supply

The power supply is 220/240 Volts, 50 Hz AC.

12.7. Help – Useful Phone Numbers

- Chemists/Pharmacies/Drugs stores are open like general shops. In case of emergency, immediate response will be given by the following telephone numbers:

12.3 in Heraklion

Tourist Police: 2810- 283 190

Traffic Police: 2810- 282 031

Airport of Iraklion: 2810- 228 402

Olympic Airways: 2810- 229-191, 244-802

Port Authorities: 2810- 244 912

(b) in Hersonissos:

Tourist Police: 28970-21000

Police Station: 28970-22100, 22222

Port Authorities: 28970-23111

Consulates:

Consulate of Britain: 2810- 224 012.

Consulate of Belgium: 2810-221 098

Consulate of Germany: 2810-226 288

Consulate of Italy: 2810-342 561

Consulate of Holland: 2810-346 202

Consulate of Russia: 2810-281 456

Consulate of Sweden: 2810-226 254

Consulate of Norway: 2810-341 872

- If something of value is lost or stolen and you wish to claim an insurance you must make a report to the local police station and keep a copy of it.
- Loss of passport must be reported to your Embassy as well as to the Police. The Organisers cannot be held liable for injury to Conference Delegates or for damage to or loss of their property.

12.8. Web Site

All information relevant to the Conference is available at the following Internet address:
www.isap-power.org

13. Paper Sessions

An overall number of 96 papers will be presented at the Conference selected from a larger number of submitted papers. The papers were accepted following review process of their full text. Additionally, five Key Note speeches will be given. The authors come from 30 different countries. The complete list of the papers sorted in sessions is given below.

14. Panel Sessions

14.1. Smart House and Smart Grid Panel, Organized by Dr. Aris Dimeas (Monday, 26/09/2011, 11:30-13:30)

14.2. Wind Power Forecasting Panel, Organized by Dr. George Kariniotakis (Tuesday, 27/09/2011, 11:15-14:00)

14.3. Electrical Vehicles Panel, Organized by Professor Mlanden Kezunovic (Tuesday, 27/09/2011 11:15-14:00)

15. Keynote Speeches

Sustainable Electric Power Systems in the 21st Century: *Requirements, Challenges and the Role of Intelligent Systems*

Dr. Prabha Kundur

Sustainability of electric power systems requires balancing the business across three areas: economic, social and environmental. This will have a profound impact on how power systems will be planned, built and operated in the future. In the evolving electricity supply industry environment, the challenges are to produce, transmit, and use energy in an environmentally friendly manner, to reduce costs by improving equipment performance, operating efficiency and business practices, and enhance the reliability and quality of power supply. In particular, there will be increased focus on improving the security and reliability of power systems while addressing environmental concerns, such as greenhouse gas emissions and global warming issues. There will also be greater emphasis on

"smart" management and use of energy. Research, development and application of intelligent systems technologies will play a major role in shaping the future directions of power systems in this regard.

This presentation will describe these changes affecting the electric power industry and will highlight the role of intelligent systems in influencing the changes.

The Interconnection of the Crete Power System to the Mainland Grid

Michael Papadopoulos
Em. Prof. Of NTUA
President of Hellenic TSO

The interconnection of the islands by submarine cables to the mainland Grid, in order to eliminate the use of expensive oil products in the local power stations, is applied in Greece since 1960. All the islands near the mainland are already interconnected, but the largest ones, remain autonomous, manly for technical reasons. Last years considerable progress on the HVDC transmission technology has been made, due to the development of power electronic converters and plastic cables, so that all the Aegean islands, including Crete, could be interconnected. On the other hand the interconnection of the island offers the possibility of much more effective exploitation of the local Renewable Energy Sources (RES).

In this communication, the main results of a study for the development of the "Aegean power transmission System", and in some more details the part concerning Crete, are presented. The impact of this extension to the operation of the Hellenic Transmission Power System, where already an extensive RES penetration in the near feature is provided, as well as the necessity of the use of advanced technology control systems, are also shortly presented and discussed.

The Three Pillars of Smart Distribution realized by IEC 61850 Communications

Prof. Z. A. Styczynski

The enhancement of distribution networks into smart grids is accompanied by new functions and technologies like network automation, smart metering and de-centralized energy management. Consequently, the information and communication technology (ICT) must penetrate the distribution systems down to the end consumers on the low voltage network what is not the case in today system. Also on the different control levels of electric networks various communication protocols and information systems are applied which do not allow seamless information exchange. Resulting, there is a strong need for uniformity of the data models and the services of the communication system for the overall network control and data acquisition. This uniformity can be achieved by the application of IEC 61850. Additionally, there is a need for harmonizing IEC 61850 with the standards for gateways in home automation and smart meters and also with data base systems using Common Information Models (CIM / IEC 61968). A pilot application in the framework of the European lighthouse project WEB2Energy is demonstrated.

Smart Grids in the Greek Islands

Nikos Hatziargyriou, Isidoros Vitellas, Stavros Makrynikas and Aris Dimeas

Greece has 36 Non-Interconnected electrical systems. The peak demand varies from 50kW to 700MW while in some of them the instant RES penetration exceeds 40% several hours per year. In order to cope with the technical challenges in these systems PPC plans to deploy Smart Grid technologies. The vision of PPC will be presented organized in several phases: Distribution Management System, Advanced Energy Management System and Deployment of Smart Meters. The basic Energy Management System concepts will be presented focusing on the management RES such as Hybrid and CSP Stations.

Complex Systems for an ICT-enabled Energy System

Carlos Alvarez Pereira,
Professor, President, INNAXIS Foundation

A set of trends at the confluence of economy, politics, technology, culture and society are driving the transformation of Energy Systems. As these become larger and more heterogeneous, and integrate elements having unpredictable behaviour, old approaches for their modeling, control, management and governance become outdated. These trends acting on Energy Systems produce an increase in the number of autonomous actors (hence of autonomous sources of demands and constraints) and in the density of connections and interactions between them. These are exactly the requisites for considering that the techniques used for describing and understanding Complex Systems can be fruitful.

That said, can Complex Systems Science provide us in this context new approaches and tools for modeling, controlling and governing Energy Systems in a better way ? Does it open a pathway towards higher forms of organization in the field of Energy ? Do we foresee more resilient, adaptive and sustainable Energy Systems ?

From the opinions of a wide range of experts having participated in the ComplexEnergy project, the answer is undoubtedly positive but, at the same time, the interactions between the Energy, ICT and Complex Systems research communities are still insufficient to translate academic research into new paradigms for the design and governance of Energy Systems. As next steps in the right direction, ComplexEnergy also identified the key elements in two dimensions whose intertwining will produce relevant outcomes in the future of this interdisciplinary field. First is the translation of the macro trends described above into specific challenges faced by Energy Systems. Second is the identification of particular techniques and knowledge domains that can be useful to address these challenges. The combination of both is the basement to advance towards new R&D projects involving expertise from Energy, ICT and Complex Systems domains, as well as receiving proper attention from the industry.

Paper ID per Session

Paper Session 1

#25, #46, #104,

#123, #144, #149

Paper Session 2

#5, #73, #83,

#98, #122, #177

Paper Session 3

#7, #24, #34,

#50, #53, #60

Paper Session 4

#17, #19, #32,

#38, #74, #113, #126

Paper Session 5

#29, #52, #55,

#65, #66, #134, #140

Paper Session 6

#44, #48,

#49,#129, #139

Paper Session 7

#3, #42, #68, #108,

#142, #148, #169

Paper Session 8

#43, #79, #101,#105,

#120, #127,#135,#138

Paper Session 9

#47,#99

#111,#141

Paper Session 10

#69, #110,

#115, #131

Paper Session 11

#33, #59, #92,

#107, #133, 151,#199

Paper Session 12

#41, #72, #84,

#116, #118, #132

Paper Session 13

#100, #102, #106,

#109,#112, #130, #267

Paper Session 14

#21, #26, #97,

#114, #128, #150

Paper Session 15

#40, #63, #121,

#152, #161, #166

Paper Session 16

#28, #31, #64, #71

#96, #119, #233

Time Table

DAY	TIME	CONFERENCE ROOMS		
		MINOS	**DANAE – EUROPA**	**ARTEMIS-ATHENA**
Sunday Sept. 25, 2011	16.00 – 20.00	Registration		
	20.00 – 22.00	Welcome Cocktail		
Monday September 26, 2011	08.00 – 09.00	Registration		
	09.00 – 11.00	**Introduction by:** ➢ Prof. Nikos Hatziargyriou, Conference Chairman ➢ Prof. Kevin Tomsovic, President ISAP Board of Directors ➢ Mr Apostolos Baratsis, Deputy CEO of PPC S.A. **Key Note Speech I** "Sustainable Electric Power Systems in the 21st Century: Requirements, Challenges, and the Role of Intelligence Systems" , Prabha S. Kundur **Key Note Speech II** "Interconnection of Crete to the mainland Greece", Michalis Papadopoulos		
	11.00 – 11.30	Coffee Break		
	11.30 – 13.30	**Paper Session 1** RES Integration	**Paper Session 2** Intelligent Control	**Panel 1** **Active Houses and SmartGrids** Organized by Aris Dimeas
	13.30 – 14.30	Lunch Break		

DAY	TIME	CONFERENCE ROOMS		
		MINOS	**DANAE – EUROPA**	**ARTEMIS-ATHENA**
Monday September 26, 2011	14.30 – 16.30	**Paper Session 3** RES Forecasting	**Paper Session 3** Fault Diagnosis–Protection I	**Paper Session 5** Intelligent Optimization I
	16.30 – 16.45	Coffee Break		
	16.45 – 18.30	**Paper Session 6** Load and Price Forecasting	**Paper Session 7** Fault Diagnosis-Protection II	**Paper Session 8** Intelligent Optimization II
	19.30 – 23.00	**Official Dinner and Entertainment Program**		
Tuesday September 27, 2011	09.00 – 11.00	**Key Note Speech III** "The Three Pillars of Smart Distribution realized by IEC 61850 Communications", Z. A. Styczynski **Key Note Speech IV** "Smart Grids in the Greek Islands", Aris Dimeas		
	11.00 – 11.15	Coffee Break		
	11.15 – 12.30	**Panel 2 Wind Power Forecasting** Organized by G. Kariniotakis	**Paper Session 9** Stability and Security	**Panel 3 Integration of Evs** Organized by M. Kezunovic
	12.30 – 12.45	Break		

DAY	TIME	CONFERENCE ROOMS		
		MINOS	**DANAE – EUROPA**	**ARTEMIS-ATHENA**
Tuesday September 27, 2011	12.45 – 14.00	**Panel 2** **Wind Power Forecasting** Organized by G. Kariniotakis	**Paper Session 10** Energy Markets	**Panel 3** **Integration of Evs** Organized by M. Kezunovic
	14.00 – 15.00	Lunch Break		
	16.00 – 18.30	**Tour:** Knossos Archeological Site		
	18.30 – 20.00	**Technical Visit:** Tour of Linoperamata Test Station presented by PPC S.A.		
	20.00 – 23.00	**Dinner at Rogdia village**		
Wednesday September 28, 2011	09.00 – 10.00	**Key Note Speech V** "Contributions of Complexity Theory to the Paradigm of Sustainable Electric Utilities", Carlos Alvarez Pereira		
	10.00 – 10.30	Coffee Break		
	10.30 – 12.30	**Paper Session 11** Microgrids and Smart Grids	**Paper Session 12** Demand Side Management	**Paper Session 13** Wide Area Measurement Systems and Control Centers
	12.30 – 13.30	Lunch Break		

DAY	TIME	CONFERENCE ROOMS		
		MINOS	**DANAE – EUROPA**	**ARTEMIS-ATHENA**
Wednesday September 28, 2011	13.30 – 15.30	**Paper Session 14** Multi-Agent Systems	**Paper Session 15** Smart Grids	**Paper Session 16** Distribution Systems
	15.30 – 16.00	Conference Closing		
	17.00 – 22.00	**Technical Visit:** Plastica Kritis Wind Park Visit to Plaka village, Free time for Coffee, Dinner, etc.		

* The Welcome Cocktail will be held at the Veranda of the Main Bar of the Creta Maris Hotel
All Key Note Speeches and Plenary Panel Sessions will be held in Conference Room “MINOS”

Accompanying Persons Tour:
Visit to Lychnostatis museum of folklore http://www.lychnostatis.gr/, Archanes traditional village, and Boutari local winery (Fantaxometocho), http://www.boutari.gr/?TGVmdE1lbnU9NiwxMCZMQU5HPUVOJlBhZ2VJZD04

TECHNICAL PROGRAM

Monday September 26, 2011

PLENARY OPENING SESSION

Monday, September 26, 09.00 – 11.00

Chair: KEVIN TOMSOVIC, NIKOS HATZIARGYRIOU, APOSTOLOS BARATSIS

Introduction by:

- Prof. NIKOS HATZIARGYRIOU, Conference Chairman
- Prof. KEVIN TOMSOVIC, President, ISAP Board of Directors
- Mr. APOSTOLOS BARATSIS, Deputy CEO of PPC S.A.

KEY NOTE SPEECH I

"Sustainable Electric Power Systems in the 21st Century: Requirements, Challenges, and the Role of Intelligence Systems" Dr. PRABHA S. KUNDUR (Canada)

KEY NOTE SPEECH II

"The Interconnection of Crete Power System to the Mainland Grid", MICHALIS PAPADOPOULOS, Em. Prof. of NTUA, President of Hellenic TSO (Greece)

PAPER & PANEL SESSIONS

PAPER SESSION 1 – RES Integration

Monday September 26, 11:30 – 13:30

Chair: LARS NORDSTROM

25 "Ant Colony Optimization and Analysis of Time Step Resolution in Transmission Expansion Computations for Wind Power Integration", Ida Fuchs, Terje Gjengedal (Norway)

46 "Integrating High Levels of Wind in Island Systems: Lessons from Hawaii", Nicholas Miller, Leon Rosse, Devon Manz, Harjeet Johal, James Griffin, Sebastian Achilles (USA)

#104 "Anemos.Rulez: Rule based Extreme Event Prediction and Alarming to Support the Integration of Wind Power", Hans-Peter Waldl, Philipp Brandt (Germany)

#123 "Onshore Wind Farm planning and System Simulation Analysis under Low-Carbon-Island Project at Penghu", Yuan-Kang Wu, Ching-Yin Lee, Shao-Hong Tsai (Taiwan)

#144 "Finding Representative Wind Power Scenarios and their Probabilities for Stochastic Models", Jean Sumaili, Hrvoje Keko, Vladimiro Miranda, Zhi Zhou, Audun Botterud, Jianhui Wang Argonne (Portugal, USA)

#149 "Assessment and Economic Analysis of Wind Generation on the Ancillary Services and the Unit Commitment Process for an Isolated System", Alex Papalexopoulos, Isidoros Vitellas, Nikos Hatziargyriou, Charles Hansen, Aris Dimeas, Theodora Patsaka (USA, Greece)

PAPER SESSION 2 – INTELLIGENT CONTROL

Monday 11:30 am – 13:30 pm

Chair: GERMANO LAMBERT TORRES

#5 “WRBF Network Based Control Strategy for PMSG Wind Generation System“, Chiung-Hsing Chen, Chih-Ming Hong, Ting-Chia Ou (Taiwan)

#73 “Fault Tolerant Control scheme with PID's“, Marino Sanchez-Parra, Dionisio A. Suarez, Cristina Verde (Mexico)

#83 “Adaptive Power Control Modeling and Simulation of a Hydraulic Turbine“, Teofana Puleva, Emil Garipov, Georgi Ruzhekov (Bulgaria)

#98 “Model Analysis and Intelligent-ANFIS Control Design for PWM-regulated ac/dc Converters“, Michael Bourdoulis, John Spanomichos, Antonio Alexandridis (Greece)

#122 “Pond Head Level Control in a Run-of-River Hydro Power Plant using Fuzzy Controller“, Omkar Yadav, Nand Kishor, Jesus Fraile-Ardanuy, Soumya R Mohanty, Juan I. Pérez, José I. Sarasúa (India, Spain)

#177 “Modeling and Implementation of Hydro Turbine Power Adaptive Control Based on Gain Scheduling Technique“, Georgi Ruzhekov, Tsonyo Slavov, Teofana Puleva (Bulgaria)

PANEL SESSION 1 – ACTIVE HOUSES AND SMART GRIDS

Monday 11:30 am – 13:30 pm

Chair: ARIS DIMEAS

The goal of this workshop is to bring together experts and several leading European and national research projects active in the domain of Energy Efficiency, SmartGrids, SmartHouses and SmartCities. It is expected to act as a forum for discussion and exchange of best practices especially with focus on innovative approaches as well as the architecture and applications in real test sites across Europe. The workshop is intended to provide the field for in-depth discussions about technological concepts, usage of intelligent applications and algorithms, field experiences, and scenario analyses, as well as about the hurdles, challenges and necessary framework conditions for exploiting demand flexibility and energy efficiency in the emerging Smart Grid Era.

PAPER SESSION 3 – RES FORECASTING

Monday 14:30 pm – 16:30 pm

Chair: NICHOLAS W. MILLER

#7 “Weather Pattern Classification and Relationships with Observational Wind Speed over Iberia“, Alvaro Pascual, Francisco Valero, M. Luisa Martin, Javier Sanz, M. Yolanda Luna, A. Morata (Spain)

#24 “Utilising Numerical Weather Forecast for Planning Electricity Production in Cogeneration Plant“, Miron Kursa, Łukasz Ligowski, Sławomir Walkowiak, Witold R. Rudnicki (Poland)

#34 “A Data Mining Based Methodology for Wind Forecasting“, Sérgio Ramos, João Soares, Zita Vale, Hugo Morais (Portugal)

#50 “Short-Term Wind Power Forecasting using a Hybrid Evolutionary Intelligent Approach“, Joao Catalao, Gerardo Osorio, Hugo Pousinho (Portugal)

#53 “Autonomous Neural Models Applied to Medium-Term Water Inflow Forecasting“, Vitor Hugo Ferreira, Caio Monteiro Leocádio (Brazil)

#60 “Prediction of Wind Power by Artificial Intelligence Techniques“, Petre-Cristian Razusi, Mircea Eremia (Romania)

PAPER SESSION 4 – FAULT DIAGNOSIS AND PROTECTION I

Monday 14:30 pm – 16:30 pm

Chair: GEORGE COKKINIDES

#17 “Fault Location in Underground Systems Through Optimum-Path Forest“, Andre Souza, Pedro da Costa Junior, Paulo Silva, Caio Ramos, Joao Papa (Brazil)

#19 “Smart Meters from the Angles of Consumer Protection and Public Service Obligations“, Geert Deconinck, Bram Delvaux, Klaas De Craemer, Zhifeng Qiu, Ronnie Belmans (Belgium)

#32 “Recording and Managing Field Leakage Current Waveforms in Crete. Installation, Measurement, Software Development and Signal Processing“, Dionisios Pylarinos, Kiriakos Siderakis, Emmanuel Emmanuel Thalassinakis, Isidoros Vitellas, Eleftheria Pyrgioti (Greece)

#38 “An Automated Classifier for Asynchronous Diagnosis of Partial Discharge Defects“, Pete Baker, Alex Mair, Martin Judd (United Kingdom)

#74 “Neural Adaptive Notch Filter to Harmonic Detection“, Rondineli Rodrigues Pereia, Carlos Henrique da Silva, Luiz Eduardo Borges da Silva, Germano Lambert-Torres (Brazil)

#113 Single Channel ICA-based Method for Power Quality Disturbance Analysis
Danton Ferreira, José Seixas, Augusto Cerqueira (Brazil)

#126 "SPS Generator Tripping Planning Using Immune Algorithm", Chao-Rong Chen, Wen-Ta Tsai, Chin-Yin Lee, Zhen-Fa Lin (Taiwan)

PAPER SESSION 5 – INTELLIGENT OPTIMIZATION I

Monday 14:30 pm – 16:30 pm

Chair: ZITA VALE

#29 "Reactive Power Optimization using Evolutionary Techniques: Differential Evolution and Particle Swarm", Florin Catalin Ionescu, Constantin Bulac, Mircea Eremia (Romania)

#52 "Natural Optimization Applied to Medium-Term Hydrothermal Coordination", Vitor Hugo Ferreira, Gabriel Henrique Clemente e Silva (Brazil)

#55 "Two-Layered EPSO for Maximizing Loadability with FACTS Devices", Hiroyuki Mori, Hajime Fujita (Japan)

#65 "GA-based Method for Optimal Allocation of Fixed and Switchable Capacitors in Distribution Systems with Multi Level Load", Mahmoud reza Haghifam, Alireza Salehinia, Majid Shahabi, Faezeh Mahdloo (Iran)

#66 "Loss Reduction and Voltage improvement in Distribution System with DGs Using GA-based Optimal Capacitor Placement", Mahmoud reza Haghifam, Alireza Salehinia, Majid Shahabi, Faezeh Mahdloo (Iran)

#134 "Genetic Algorithms for the Capacitor Placement Problem in Distribution Networks", Luis Vargas, Guillermo Jimenez-Estevez (Chile)

#140 Wind Farm and Pumped Storage Integrated in Generation Scheduling Using PSO
Hassan Siahkali (Iran)

PAPER SESSION 6 – LOAD AND PRICE FORECASTING

Monday 16:45 am – 18:30 pm

Chair: HIROYUKI MORI

#44 "Short-Term Load Forecasting with SOM Neural Networks and its Application to the Electrical Spanish Market", MIGUEL LÓPEZ, SERGIO VALERO, CAROLINA SENABRE, JUAN APARICIO, ANTONIO GABALDON (Spain)

#48 "A Pareto Optimization Approach of a Gaussian Process Ensemble for Short-Term Load Forecasting", Miltiadis Alamaniotis, Andreas Ikonomopoulos, Lefteri Tsoukalas (USA, Greece)

#49 "Application of an Intelligent System based on EPSO and ANFIS to Price Forecasting", Joao Catalao, Gerardo Osorio, Hugo Pousinho (Portugal)

#129 "Short-Term Electricity Load Forecasting With Generalized Additive Models", Amandine PIERROT, Yannig GOUDE (France)

#139 "A Load Forecasting Hybrid Method for an Isolated Power System", George Sideratos, Isidoros Vitellas, Nikos Hatziargyriou (Greece)

PAPER SESSION 7 – FAULT DIAGNOSIS AND PROTECTION II

Monday 16:45 am – 18:30 pm

Chair: GEERT DECONINCK

#3 "Controlling of Artificial Neural Network for Fault Diagnosis of Photovoltaic Array", Syafaruddin Syafaruddin, Engin Karatepe, Takashi Hiyama (Indonesia, Turkey, Japan)

#42 "An Ontology Model for Intelligent Tools Applied to Transformer Condition Evaluation", Filipe Giacomelli, Thiago Inoue, Diego Morais, Jacqueline Rolim (Brazil)

#68 "A Bayesian Network Approach to Fault Diagnosis and Prognosis in Power Transmission, Systems", Raimundo Teive, Jorge Coelho, Celso Camargo, Paulo Charles, Thales Lange, Leonardo Cimino (Brazil)

#108 "On-line Diagnosis of a Power Generation Process Using Probabilistic Models", Pablo H. Ibarguengoytia ,Alberto Reyes (Mexico)

#142 "A Novel Fault Classification Approach Using Manifold Learning Algorithm", Yufan Guan, Mladen Kezunovic (USA)

#148 "Transformer Fault Diagnosis Based on Autoassociative Neural Networks", Adriana Castro, Vladimiro Miranda, Shigeaki Lima (Brazil, Portugal)

#169 "A Novel and fast Moving Window Based Technique for Transformer Differential Protection", Hassan Abniki (Iran)

PAPER SESSION 8 – INTELLIGENT OPTIMIZATION II

Monday 16:45 am – 18:30 pm

Chair: ANASTASIOS BAKIRTZIS

#43 "Double Branch Outage Modeling and Its Solution Using Differential Evolution Method", Oguzhan Ceylan, Aydogan Ozdemir, Hasan Dag (Turkey)

#79 "Transmission Expansion Planning by Enhanced Differential Evolution", George Orfanos Pavlos Georgilakis, George Korres, Nikos Hatziargyriou (Greece)

#101 "Application of Fuzzy Inference Systems for Evaluation of Failure Rates of Power System Components", Yong Liu, Chanan Singh (China, USA)

#105 "A GPU Accelerated PSO with Application to Economic Dispatch Problem", Stelios Papadakis, Anastasios Bakirtzis (Greece)

#120 "Invasive Weed Optimization Feature in Market-BasedTransmission Expansion Planning", Monazzah Ebrahimi Gardeshi, Ashkan Rahimi Kian (Iran)

#127 "Reconfiguration and Capacitor Placement in Radial Distribution Systems for Loss Reduction and Reliability Enhancement", Pooya Rezaei, Mehdi Vakilian, Ehsan Hajipour (Iran)

#135 "A Memetic Algorithm Based on Mixed Ant Colony Optimization and Genetic Algorithm for Optimal Capacitor Placement", Max Chianca Pimentel Filho, Manoel Firmino Medeiros Jr.

#138 "ASISTO: An Integrated Intelligent Assistant System for Power Plant Operation and Training", Alberto Reyes, Pablo H. Ibarguengoytia ,Francisco Elizalde, Liliana Sánchez, Alondra Nava (Mexico)

Tuesday, September 27, 2011

Tuesday, September 27, 09:00 – 10:30

Chair: DAGMAR NIEBUR, ISIDOROS VITELLAS, MANOLIS VOUMVOULAKIS

KEY NOTE SPEECH II

"The three pillars of Smart Distribution realized by IEC 61850 Communications", Prof. Z. A. STYCZYNSKI (Germany)

KEY NOTE SPEECH IV

"Smart Grids in the Greek Islands", Dr Aris DIMEAS

PANEL SESSION 2 – WIND POWER FORECASTING

Tuesday 11:15 pm – 14:00 pm

Chair: GEORGE KARINIOTAKIS

PAPER SESSION 9 – STABILITY AND SECURITY

Tuesday 11:15 pm – 12:30 pm

Chair: LOUIS WEHENKEL

#47 "Transforming Continuous Attributes using GA for Applications of Rough Set Theory to Control Centers", Germano Lambert-Torres, Marcos Alberto Carvalho, Carlos Henrique Valério Moraes, Luiz Eduardo Borges da Silva, Adelson Vivaldi (Brazil)

#99 “An Intelligent Voltage Control System - Training, Learning, and Control“, Haomin Ma, Dan Lin, Mei Tao (China)

#111 “Geometric Properties of the Loadability Surface at SNB-SLL Intersections and Tangential Intersection Points“, Magnus Perninge, Lennart Söder (Sweden)

#141 “Power System Voltage Stability Analysis Using ANN and Continuation Power Flow Methods“, Balasubramanian R, Rhythm Singh (India)

PANEL SESSION 3 – INTEGRATION OF ELECTRICAL VEHICLES

Tuesday 11:15 pm – 14:00 pm

Chair: MLANDEN KEZUNOVIC

EV#1 “Power System Level Impacts of EVs and PHEVs”, Author/presenter: A. P. Sakis Meliopoulos

EV#2 “Analysis of the Optimal Battery Sizing for Plug-in Hybrid and Battery Electric Vehicles on the Power Consumption and V2G Availability”, J. Van Roy, S. De Breucker, and J. Driesen

EV#3 “Virtual Power Plant Control Concepts with Electric Vehicles”, A. F. Raab, M. Ferdowsi, E. Karfopoulos, I. Grau Unda, S. Skarvelis-Kazakos, P. Papadopoulos, E. Abbasi, L.M. Cipcigan, N. Jenkins, N. Hatziargyriou, and K. Strunz

EV#4 “Introducing Electric Vehicles in the Microgrids Concept”, Evangelos L. Karfopoulos, Panagiotis Papadopoulos, Spyros Skarvelis-Kazakos, Inaki Grau, Liana M. Cipcigan, Nikos Hatziargyriou and Nick Jenkins

EV#5 “An Evaluation Study of Wireless Access Technologies for V2G Communications”, Erietta Zountouridou, George Kiokes, Nikolaos Hatziargyriou, Nikolaos Uzunoglu

EV#6 “Adapting EV-Microgrid Concepts to European Grid Standards Related to Power Quality”, Marios Moschakis, Evangelos Karfopoulos, Erietta Zountouridou, Stavros Papathanassiou

PAPER SESSION 10 – ENERGY MARKETS

Tuesday 12:45 pm – 14:00 pm

Chair: MANISA PIPATTANASOMPORN

#69 “Preventing Loop Flows Using Fuzzy Set Theory and Differential Evolution”, Gulcihan Ozdemir Dag, Mustafa Bagriyanik (Turkey)

#110 “Cost Dependent Strategy for Electricity Markets Bidding Based on Adaptive Reinforcement Learning“, Tiago Pinto, Zita Vale, Fátima Rodrigues, Isabel Praça, Hugo Morais (Portugal)

#115 “Supporting Services for Real Time Wheeling Transactions Requests“, Andreas Vlachos, Pandelis Biskas (Greece)

#131 “Regional Power Trade Modeling“, Peter Kadar (Hungary)

Wednesday, September 28, 2011

Wednesday, September 28, 09:00 – 10:00

Chair: VLADIMIRO MIRANDA, EMMANOUIL THALASSINAKIS

KEY NOTE SPEECH V

“Contributions of Complexity Theory to the Paradigm of Sustainable Electric Utilities”, Carlos Alvarez Pereira (Spain)

PAPER SESSION 11 – MICROGRIDS AND SMART GRIDS

Wednesday 10:30 pm – 12:30 pm

Chair: MEN-SHEN TSAI

#33 "Design Tool for Isolated Micro-Grids Based on Methods of Computational Intelligence", Maike Stark, Gerhard Krost (Germany)

#59 "A Framework for Evaluating Possible Contribution from Integration of Storage Units in a Centralised Voltage Control System for active MV Distribution Networks", Diana Moneta, Claudio Carlini, Mario Belotti, Paolo Mora (Italy)

#92 "Smart Optimal Control of DC-DC Boost Converter for Intelligent PV Systems", Mohamed Elshaer, Ahmad Mohamed, Osama Mohammed (USA)

#107 "Independent and Clean Electricity Supply for a Hospital in Palestine Controlled by Fuzzy Rules and Time Estimator", Mohammed Mushtaha, Gerhard Krost (Germany)

#133 "Trustworthy Injection/Curtailment of DER in Distribution Network Maintaining Quality of Service", Shahid Hussain, Nicholas Honeth, Rune Gustavsson, Claes Sandels, Arshad Saleem (Sweden)

#151 "Gossip Based Message Dissemination in Future Power Systems", Aleksandra Krkoleva, Vesna Borozan, Aris Dimeas, Nikos Hatziargyriou (FYROM., Greece)

#199 "Feasibility Study of Semantic Sensor Networks in the context of Smart Grids", Ruben F. Perez, Oscar Perez, Antonio de la Villa, Pedro Cruz, Rafael Martinez-Tomas, Gonzalo Leon (Spain)

PAPER SESSION 12 – DEMAND SIDE MANAGEMENT

Wednesday 10:30 pm – 12:30 pm

Chair: PETER KADAR

#41 "Contextual Intelligent Load Management with ANN Adaptive Learning Module", Luis Gomes, Filipe Fernandes, Tiago Sousa, Marco Silva, Hugo Morais, Zita Vale, Carlos Ramos (Portugal)

#72 "Implementation and Test of Demand Response using Behaviour Descriptions", Daniel Kullmann, Oliver Gehrke, Henrik Bindner (Denmark)

#84 "DSM Impact Prediction Through a Model of the Italian Residential End-Use", Alberto Prudenzi, Andrea Silvestri, Giuseppe Lucci (Italy)

#116 "Decentralized, Agent-Mediated Participation of Flexible Thermal Loads in Electricity ,arkets", Dimitrios Papadaskalopoulos, Pierluigi Mancarella, Goran Strbac (United Kingdom)

#118 "Impact of Large-Scale Integration of Intelligent Meters to the Operation of the Power System of Crete", Georgia Asimakopoulou, Emmanouil Voumvoulakis, Aris Dimeas, Nikos Hatziargyriou (Greece)

#132 "Demand Response Programs Definition Supported by Clustering and Classification Techniques", Sérgio Ramos, Hugo Morais, Pedro Faria, Zita Vale, João Soares (Portugal)

PAPER SESSION 13 – WIDE AREA MEASUREMENT SYSTEMS AND CONTROL CENTERS

Wednesday 10:30 pm – 12:30 pm

Chair: R. BALASUBRAMANIAN

#100 "Impact of GPS Signal Quality on the Performance of Phasor Measurements", yong liu, yong jia, zhenzhi lin, yingchen zhang, lei wang, Kevin Tomsovic, Yilu Liu (USA)

#102 "Power System Islanding Detection Based on Wide Area Measurement Systems", Zhenzhi Lin, Tao Xia, Yanzhu Ye, Ye Zhang, Lang Chen, Yilu Liu, Kevin Tomsovic, Terry Bilke (USA)

#106 "Distributed MPC of Wide-Area Electromechanical Oscillations of Large-Scale Power Systems", Da Wang, Mevludin Glavic, Louis Wehenkel (Belgium)

#109 "Intelligent Behavior in a Cyber-Ambient Training System for Control Center Operators", Luiz Faria, António Silva, Carlos Ramos, Luís Gomes, Zita Vale, Albino Marques (Portugal)

#112 "Wide-Area Measurement System Control to Coordinate HVDC Links in Large Scale Power Systems", Robert Eriksson, Lennart Söder (Sweden)

#130 "Optimal Placement of Phasor Measurement Units: A Literature Review", Nikolaos Manousakis, George Korres, Pavlos Georgilakis (Greece)

#267 "Distribution System Monitoring and Control for the AEGEAN Islands: PPC's Procurement of the New SCADA and DMS", N Silva, M Champakis, N. Fountas, E. Voreadi (Portugal, Greece)

PAPER SESSION 14 – MULTI AGENT SYSTEMS

Wednesday 13:30 pm – 15:30 pm

Chair: JOAO CATALAO

#21 "An Autonomous Distributed Agent Approach to Power System Restoration", Takeshi Nagata, Shinnosuke Fukunaga (Japan)

#26 "Coordinating a Society of Switch Agents for Power Distribution Service Restoration in a Smart Grid", Wan-Yu Yu, Von-Wun Soo, Men-Shen Tsai, Yen-Bo Peng (Taiwan)

#97 "Simulation Results of Cogeneration Units as System Reserve Power Source Using Multiagent Modeling", Dániel Divényi, András Dán (Hungary)

#114 "Detecting Cyber Intrusions in SCADA Networks Using Multi-Agent Collaboration", Ahmed F.Shosha, Pavel Gladyshev, Shinn-Shyan Wu, Chen-Ching Liu (Ireland)

#128 "Knowledge Based Support for Real Time Application of Multiagent Control and Automation in Electric Power Systems", Arshad Saleem, Lars Nordström, Morten Lind (Sweden, Denmark)

#150 "Scheduling Algorithms for Agent Based Control and Scheduling of Microgrids", Despoina Koukoula, Aris Dimeas, Nikos Hatziargyriou (Greece)

PAPER SESSION 15 – SMART GRIDS

Wednesday 13:30 pm – 15:30 pm

Chair: GERHARD KROST

#40 "General Communication Strategy for Control of Distributed Energy Resources in Smart Grids via International Standards", Samer Jaloudi, Egon Ortjohann, Andreas Schmelter, Worpong Sinsukthavorn, Paramit Wirasanti (Germany, United Kingdom)

#63 “Smart Grid Information Clearinghouse: A Content Collection and Knowledge Discovery Model“, Saifur Rahman, Manisa Pipattanasomporn (USA)

#121 “Situation-Aware Demand Response in the Smart Grid“, Babis Magoutas, Dimitris Apostolou, Gregoris Mentzas (Greece)

#152 “Engineering of Trustworthy Smart Grids Implementing Service Level Agreements“,Rune Gustavsson, Shahid Hussain, Lars Nordström (Sweden)

#161 “Symbolic Integration and Autonomous State Estimation: Building Blocks for an Intelligent Power Grid“, Sakis Meliopoulos, George Cokkinides, Sungyun Choi, Evangelos Farantatos, Renke Huang, Yonghee Lee (USA)

#166 “Heuristic Optimal Restoration Based on Constructive Algorithms for Future Smart Grids“, Sarina Adhikari, Fangxing Li, Qinran Hu, Zhenyuan Wang (USA)

PAPER SESSIONS 16 – DISTRIBUTION SYSTEMS

Wednesday 13:30 pm – 15:30 pm

Chair: OLIVER GEHRKE

#28 “Electrical Consumers Data Clustering Through Optimum-Path Forest“, Caio Ramos, Andre Souza, Rodrigo Nakamura, Joao Papa (Brazil)

#31 “Intelligent Monitoring of the Health and Performance of Distribution Automation“, Susan Rudd, John Kirkwood, Euan Davidson, Scott Strachan, Victoria Catterson, Stephen McArthur (United Kingdom)

#64 “Logic Programming and Fuzzy Monte Carlo for Distribution Network Reconfiguration“, Zita Vale, Bruno Canizes, João Soares, Pedro Oliveira, Tiago Sousa, Tiago Pinto (Portugal)

#71 “Control Strategy for an Autonomous Energy System with Electricity and Heat Flows”, Victor Velez, Laura Ramirez-Elizondo, G.C.Bob Paap (Netherlands)

#96 “Feeder Reconfiguration for Accommodating Distributed Generations Interconnection“, Rung-Fang Chang, Ya-Chin Chang, Chan-Nan Lu (Taiwan)

#119 “Distribution System to Fault Classification Using Negative Sequence and Intelligent System“, Angelo Oliveira, Paulo Augusto Garcia, Leonardo Oliveira, Jose Luiz Pereira, Hleio Silva (Brazil)

#233 “Applications of Hybrid EP-ACO for Power Distribution System Loss Minimization under Load Variations“, Men-Shen Tsai, Chieh-Cheng Chu (Taiwan)