The Principality of Monaco is the second smallest sovereign country in the world – the first one being the Vatican City. The size of Central Park in New York, its population barely exceeds 30,000 inhabitants, among whom less than 6,000 are Monégasques subjects.

This little kingdom by the sea, located 18 kilometres to the east of Nice, was established in the late 13th century. With the exception of a 25-year period during and after the French Revolution, it has always been ruled by the same family. This makes the Grimaldis of Monaco one of the oldest reigning dynasty in the world.

Despite its size, the Principality of Monaco enjoys the rights of a full-fledged independent state: it is a member of the United Nations with full voting rights; it exchanges ambassadors with some thirty capitals and mints its own euros.

In the constitutional monarchy of Monaco, it is the Prince who holds the executive power. Albert, born in 1958, the second child of Prince Rainier III and American-born Princess Grace, acceded to the throne in 2005.

Since Prince Albert I, who pioneered the then

*iter***newsline**
ITER Organization
HQ 210A
CS 90 046
Route de Vinon-sur-Verdon
13067 Saint Paul Lez Durance Cedex
France
Tel: +33 (0) 4 4217 6615
www.iter.org
newsline@iter.org

Editor-in-Chief

Deputy Editor

Web Design

Print Design and Production

Art Director

Designer

Cover Photo

The goal of ITER is to demonstrate the scientific and technological feasibility of fusion power for peaceful purposes. Scientists will therefore study plasmas in conditions similar to those expected in a electricity-generating fusion power plant.

ITER is designed to generate 500 MW of fusion power for extended periods of time, ten times more than the energy input needed to keep the plasma at the right temperature (Q=10). So far, the record energy turn out by fusion is 16 MW, produced by JET, the world's largest fusion experiment placed in Oxfordshire, UK. ITER will be twice the size of JET and it is aimed to be the first fusion experiment to produce net power. It will also test the key technologies, including the heating, control, diagnostic and remote maintenance that will be needed for a real fusion power station.

Operation of ITER will proceed in phases: a several-year "shakedown" period of operation in pure hydrogen, when the tokamak will remain accessible for operating staff for repairs, will be used to find the most promising physics regimes; this will be followed by operation in deuterium with a small amount of tritium to check shielding provisions, before launching increasingly frequent full operation with equal mixture of deuterium and tritium, at full fusion power.

Sabina Griffith

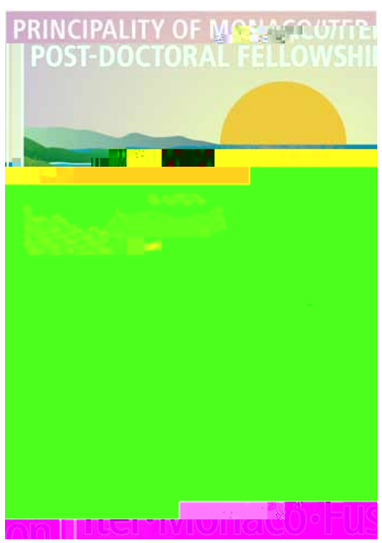
In January 2008, a Partnership Agreement was signed between the ITER Organization and the Principality of Monaco that set up five Postdoctoral Fellowships together with the establishment of an annual Conference on ITER related research. The Principality contributes 400,000 € for five Fellowships every two years over a ten year period, enabling five young scientists from the seven ITER Member countries or from the Principality of Monaco to be trained over two years in research areas related to the ITER project.

The Principality of Monaco is deeply committed to protecting the environment and to encourage sustainable development which is testified by the existence of the Prince Albert II of Monaco Foundation. As such it comes to no surprise that the Principality has expressed its interest in the ITER project as for the stakes it holds: "Needless to say, the challenge of protecting our environment and implementing measures to enable natural resources to be protected, extends far beyond the borders of each country", Prince Albert II writes on his website: "By definition, this is a common global challenge [...] This situation compels each one of us to take action if we want to protect the planet for future generations. Rest assured of my personal and unfailing commitment towards achieving this goal."

The principal motivation of the Research Fellowships is the development of excellence in research in fusion science and technology within the ITER framework. Brilliance and creativity, together with understanding of the relevance of your research interests to the ITER project are required.

In January 2009 the first five candidates arrived at ITER. In September this year, five new candidates were appointed to conduct research in fusion science and technology during the next two years under funding provided by the Partnership Agreement between ITER and the Principality of Monaco.

For full information go to: www.iter.org/Pages/Monaco2010.aspx



Sophie Carpentier-Chouchana

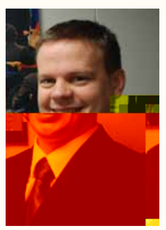
"The ITER Monaco Postdoctoral Fellowship Program has given me the opportunity to join one of the most challenging scientific and technological projects of our time. My work in ITER has consisted in estimating what will be the wear of the 700 m2 beryllium first wall, which is a crucial question in estimating the lifetime of the tokamak internal components. Another part of my activities has been to assess how much of the precious fuel, the tritium, will be retained in the main wall during operation of the device and so to estimate how many shots will be possible before reaching the limit for the tritium-inventory allowed in ITER. Thus, the Monaco Postdoctoral Fellowship Program has given me the chance to work and make progress on critical aspects of the ITER project. From a personal point of view, it has meant a real opportunity for me to continue my personal adventure in fusion."

Matt Jewell

"My time at ITER has been an extraordinary opportunity for me to see these advanced superconducting materials—of which I was an active participant in the R&D for several years—now being put to use in the world's largest set of superconducting magnets. It has been both personally and professionally rewarding to interact with the teams at IO and across the DAs, and I will remember for my entire career the lessons I have learned here."

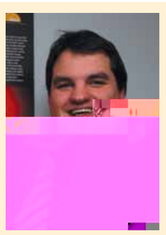
Junghee Kim

"Working at ITER is a dream for many young researchers in Fusion Science and Technology. Therefore, the fact that I am now working on this project is indeed a personal honour. In ITER, I can meet people from many fields, and it has made me realize that the world is wider than I thought. Before joining ITER, I thought I should just concentrate on 'my' field; however, that is not the right way to grow as a professional because a big project such as this one is accomplished by all of us. The greatest reward of my time in ITER is that my professional insight has been continuously developed. I will work towards fulfilling my dream for making the fusion reactor with more insight and a wealth of experiences."



Evgeny Veshchev

"ITER is a great ambitious project uniting creative ambitious professionals from all over the world. It is a real honour to work on ITER and I am very proud of it. I would like to express my sincerest gratitude to Monaco/ITER program for this opportunity to join this fascinating project and highly dedicated team."



Axel Winter

"The Monaco Postdoctoral Fellowship gave me the unique opportunity to work for one of the most complex and fascinating science projects of our time in an environment that brings together scientists and engineers from all the ITER partners. My work on the Plasma Control System for ITER has enabled me to work closely together with many colleagues from different ITER departments, but also from other fusion devices around the world, which has been a highly rewarding experience. "

The ITER project is moving from paper to reality, from design to hardware. As of today, 46 Procurement Arrangements have been signed, representing approximately 60 % of the total procurement value of the ITER project. Another 13 PAs are scheduled to be signed by the end of the year.

The most impressive progress is made in the area of conductor fabrication. Strand production for ITER's impressive Toroidal Field (TF) Coils has been launched in China, Japan, Korea, Russia, Europe and the US, together more than 100 tons (more than 21.000 km) of strands have been manufactured and registered in the Conductor Database.

760 meters of Copper dummy cable for the TF Coils have been produced in Japan, Korea and Russia, Japan and Korea have also produced first superconducting cable lengths. The commissioning of the winding machines is in progress in Japan as well as the welding trials for the coil cases, in Europe the call-for-tender for the winding package is underway and a contract for the qualification of the case welds has recently been signed.

A

&

I would like to welcome all of you to the Monaco ITER International Fusion Energy Days! All of us, as mankind, have put significant effort into a more convenient and better way of life, and, as a result, major gains have been made along the way.

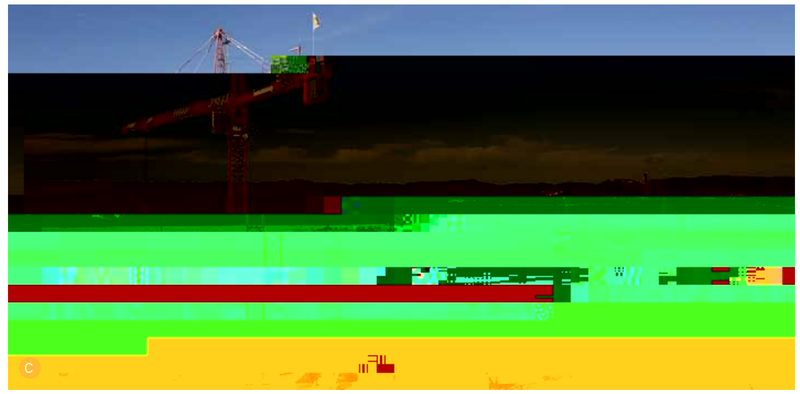
Currently though, we face some large problems; such as global warming, air pollution by carbon emission, and a shortage of energy, etc. However, I am sure that one of the best ways to solve these problems is with the development of fusion energy.

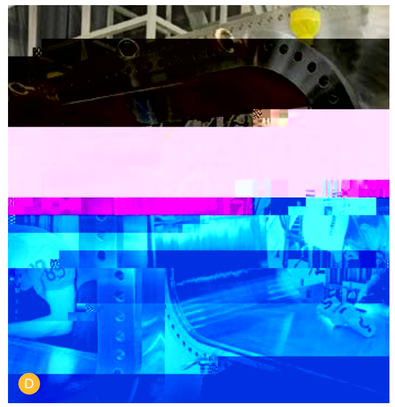
This conference is to discuss the development and improvement of fusion technology. It is significant that so many eminent scholars and experts have gathered together to address the best paths to a solution that will help to save our planet from the perils that lie ahead.

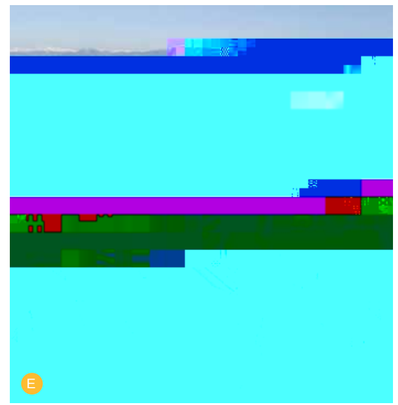
I am honored to be here with you today at this significant event. We, Hyundai Heavy Industries, manufactured and supplied the vacuum vessel and cryostat for the special project of KSTAR in 2007. KSTAR (Korea Superconducting Tokamak Advanced Research) is a prototype research project for ITER. Earlier this year, we began work on the fabricating of two of the nine sectors of vacuum vessel and ports for ITER.

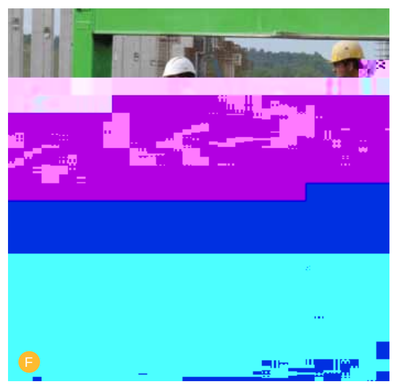
I'd like to take this opportunity to express our sincere commitment to the larger ITER project and to the successful completion of our current undertaking.

Thank you very much.









A International collaboration is the key to the success of ITER.

B The hardhats have arrived on the construction site.

C The placement of the concrete columns for the Poloidal Field Coil Winding Facility with the tokamak pit in the background.

D Prototypes of the port structures being manufactured in Korea.

E An artistic impression of what ITER will look like. The large orange building in the centre is the Tokamak hall, the long building on the right is the winding facility for the Poloidal Field Coils.

F Construction of the ITER facilities started in summer 2010.