Editorial by **Michele Mossa**

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Questions which we cannot afford to put off answering any longer

In recent months there have been many dramatic events which have had a serious impact on our world and all of these deserve to be analyzed in the pages of our magazine. One of these events is the earthquake in Japan with the consequent tsunami which has been responsible for thousands of victims and destruction in the North of the country and for enormous difficulties for the population as a whole. This raises many problematic questions. For example, whether nuclear energy should be considered as safe as declared by some experts, or whether a nation's best energy plan should be reconsidered and reanalyzed after the latest events, for example giving greater consideration to alternative and new energy sources.

I would have been glad to offer our readers some articles on the Japanese earthquake in the current issue, but as you might imagine, the situation in Japan is extremely difficult at present and many Japanese friends and colleagues who were contacted to write an article on this subject understandably asked me for more time. Therefore I can promise our readers that we will deepen this point in the next issue, having also more time to clearly analyze the situation which is still ongoing. It is still too soon to know just how much devastation the Japanese earthquake and tsunami have caused, in human or economic terms. The death toll may climb into five digits. Damage to Japan's nuclear power plants could result in sickness and dislocation for hundreds of thousands more. The country's economy, which has already endured two decades of stagnant growth, is now threatened by a stock-market collapse and a massive increase in national debt.
And yet things could have been far worse. Had an earthquake of comparable scale hit just about any other Asian country, the loss of life would almost surely have been dramatically higher. The Japan quake was more than 500 times stronger than the tremor that hit Haiti in January 2010, which was not followed by a catastrophic tsunami, and yet the death toll in Haiti was 10 to 20 times higher than it appears to be in Japan. The ultimate consequences of the disaster on Japan's society and economy will be staggering, but few countries in the world are better positioned to recover.

One question that I would like to deepen in this issue is the state of the art in alternative energy sources and nuclear energy.
In fact, the earthquake in Japan has also posed many questions concerning the security of nuclear power stations. In this issue's article "10 questions to…" we ask Prof. E. Egusquiza (Center Industrial Diagnostics, Polytechnic University Catalonia, Spain), vice chair of IAHR Committee on Hydraulic Machinery and Systems, his opinion on how safe nuclear power stations are and his opinion on the latest generation of power stations.

Should nuclear power still be considered as a viable source of energy or, since the risk is so great, should we increase funding for alternative energy sources?
We should consider how our community could deepen research into the development of new systems which could produce alternative energy, such as wave, sea current or wind energy.

The recent dramatic events in Japan will raise questions which we cannot afford to put off answering any longer, such as the necessity to develop new machinery for the production of alternative energy, like wave, sea current, wind energy, or other forms of alternative energy. We should also ask ourselves if we are now in the position to completely change our energy sources or whether new energy sources should still be considered as simply supplementary sources of energy.
Of course it is also important to consider economic factors, even though, in my opinion, it essential to give priority to the environment and to human safety.