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Editorial

Much has been said on the role of creativity in today's corporative world, which constitutes one of the basic ingredients for innovation. The qualification of professionals becomes, in this context, a basic requirement to achieve knowledge-based competitiveness. Research and development (R&D) projects and initiatives have, in particular, an essential role in the medium and long term competitiveness. In addition, such activities inherently encompass actions towards the qualification of professionals, mainly by means of their participation in stricto sensu post-graduate programmes.

Managing all this scenario becomes, thus, of extreme importance, as it outlines and directs strategies regarding those activities and, as a consequence, leads important actions concerning professional qualification. According to some scientists, the fourth generation of R&D management has as its cornerstones issues such as philosophy, strategy, organization and resource allocation. One of its philosophies regards technology and R&D strategic as instruments for long term competitiveness. One of its strategies deals with the integration of this domain to the corporate strategy, in a centralized way and, at the same time, with the business units strategy, in a decentralized way. A mature technology and R&D management, strongly linked to the qualification of its functional body, adopts a hybrid model, emphasizing both centralized and decentralized strategies.

One of the main purposes of this periodic is to disseminate scientific results achieved by the above-mentioned initiatives, which have become the leading vehicle of technology development in the Brazilian energy field. The magazine has published in recent editions results obtained in several R&D projects, which served as a basis for professional qualification in this

field. This edition presents three papers produced within post-graduate programmes, one of which based on an R&D project.

The first paper reports the development of an IT tool based on the automatic drawing of directed hypergraphs. Such issue has been addressed in a doctoral thesis in 2001, being applied within the software tool described here to support project management activities, focusing on the representation of precedence relationships. The paper claims that the application of this technique in project management tools is novel.

Virtual reality technology is approached in the second paper, which describes its application in illumination simulations in electric energy substations. This technology has great potential for planning, training and simulation activities, especially considering the advanced human-computer interface aspects it provides. The work addresses modelling, interaction and scientific visualization issues. An example of application is presented for the visualization of illuminance fields integrated with the three-dimensional digital model coming from Computer Aided Design (CAD) systems.

In the management field, a method is presented for the settlement of responsibilities to energy distribution utilities and for computing the financial share incumbent upon their consumers as regards the cost of required investments in cases not comprised by the universalization criteria for the use of electric energy. Such proposed method takes into consideration current tariff guidelines in the country, as set forth and supervised by the governmental agency in charge (*Agência Nacional de Energia Elétrica - ANEEL/Electric Energy National Agency*). The work claims that its proposal sets a financial balance between consumer shouldered costs and financial return of investments made by the power utility when providing services.

Finally, I thank all the authors for their interest in publishing their work in this scientific magazine, all members of the editorial board and collaborators of this edition and, in particular, all members of the international reviewing committee for their excellent work, without which the technical quality presented would not be possible. I would also like to remind the readers that this magazine is fully on-line at the following address:
<http://www.espacoenergia.com.br>.

Klaus de Geus
Editor-in-chief