

Blackout. The fear of energy collapse. The country is currently experimenting a time of fear, doubt and questioning. Do we really have an appropriate energy model? Is it reliable? Is it immune to plausible circumstantial factors? After all, what works without energy?

We could make use of an analogy that may even be related to the energy blackout: the intellectual blackout. This blackout is very subtle, because its effects are not at first sight so striking as the energy one. The intellectual class, composed by thinkers and scientists, may be aware of the evolution of this process which can result in the blackout that will be felt throughout the society. What are the main causes for the intellectual blackout? The problem does not lie in the intellectual capacity itself, much less in its ability to generate knowledge, but in the bonds established by the management models; by the various regulations in all instances, regardless of their character and context.

Brazil accounts for a significant portion of the world's scientific production, but still suffers to achieve results in the application of the produced knowledge. The scientific production in this country also embraces the energy field. However, as well as in other areas of science, the country struggles to generate innovation based on its inventions. New models of research and development are attempts to cover the entire innovation chain, that is, to move from science to the field of application and final result achieved. However, their processes, and perhaps to a greater extent those they are related to and with which they interact closely, yet are based on the industrial revolution, which does not address adequately and therefore does not foster a practical way to creativity and to generation of innovative solutions, essential ingredients for innovation.

Thus the intellectual blackout is caused by policies and attitudes, not by the intellectual capacity. The longer the country persists on a plaster model of management in the context of R&D and innovation, based on control, which is intrinsically divergent from the mechanism by which creativity is evident, the longer society needs in terms of new innovative and better services and of new products that will provide greater benefits, will continue to be disdained. It is against this kind of blackout we should fight.

Nevertheless, there is one thing we can be sure of: the potential for creativity in the country is significant. And this creativity, coupled with the entrepreneurship power, the ability to "make it happen", are the main drivers which will lead the country to break the ties and to build the bridge over the chasm which makes the two worlds apart.

In this issue, geodesic auscultation is addressed in the power plants monitoring context, with reports of experiments in three power plants in the Iguaçú river basin. The work includes the establishment of a monitoring network downstream the reservoir of one of the power plants, which serves to carry out external monitoring of the dam and to support a precision polygonal geodesic conducted within the galleries. The second paper addresses electrical grounding quality, analyzing the various types of variables which affect the impedance grounding, especially those related to electrochemical corrosion. The third paper brings an analysis of the sustainability of biodiesel according to dimensions such as environmental, social and economics. Biodiesel is addressed also in the fourth paper, which makes an energy balance of the canola feedstock as a source for its production. The fifth paper presents a methodology which makes use of three-dimensional industrial tomography for the automatic detection of voids in polymer insulators, also making use of artificial intelligence techniques and scientific visualization. Lastly, the application of recycled material concrete admixtures in the spillway of the Mourão Power Plant is discussed, based on the comparison in laboratory of mechanical properties, such as compressive strength, tensile strength and adherence.

We hope that the papers of this issue contribute to the scientific development of the country and the evolution of its electric sector, bringing benefits to all society.