Editorial

How industry can benefit from Drying R&D in Public Domain

Based on the information at hand, Year 2009 looks to go down in "Drying History" as the Year of Drying! At least five international drying conferences are being held in various parts of the world, e.g., Canada, Poland, Thailand, China, India and possibly several other locations not yet known to me. This surge in drying R&D and level of interest in this unit operation is no doubt spurred at least partially by the triple digit price of oil in mid-2008. The economic slowdown and consequent drop in energy costs is expected to be short-lived since fossil fuel resources are limited and their consumption must rise as emerging nations raise their standard of living, which is directly dependent on energy. Thus, interest in drying R&D will remain at an elevated level as long as energy costs are high. Of course, drying R&D is also related to quality of products, production rates, environmental issues, safety concerns, etc.

Drying Technology has made numerous tangible and intangible contributions to improved drying operations around the world although a hard number on the economic and societal benefits accrued is impossible to assess. If one simple idea presented in the journal or presented at an IDS is implemented in a major industrial operation, its economic and environmental benefit can be worth millions of dollars and yet this does not appear in any balance sheet. Certainly, it is not credited to the journal, conference or the authors involved. Indeed, our authors do an enormous service to mankind without expecting a direct benefit for their intellectual and physical effort. Our reviewers also provide volunteer effort, which goes unrecognized; they are socially and professionally conscientious and hence "donate" their valuable time and effort to the greater good regardless of geopolitical boundaries. In this age of the Internet, often much of the effort worth hundreds of million dollars on a global scale is available "free" to the whole world. Even those who do not contribute to the effort can benefit from it provided they have the motivation and ability to utilize this vast treasure of knowledge.

This brings me to the main theme of this editorial commentary. Often I am surprised and disappointed, even dismayed, by the lack of industrial participation and utilization of the massive amount of new knowledge created over the past three decades about drying technologies. Even major users and manufacturers are unaware of freely available new R&D results that could help them improve their operations as well as design capabilities. This leads to reduced, even non-existent, innovation in this area as many are pleased with thirty or even fifty year old technologies and marginal enhancement in performance. If no one brings in new, more efficient drying equipment, clearly no one needs to innovate via R&D or assimilation of freely available R&D results. The cost of this scenario is very high. It is the users of drying equipment that pays for the lack of innovation as they must run their equipment for many decades even as energy costs escalate. It is well known that, over the life of a convection type dryer, operating costs are an order-of-magnitude higher than the equipment cost. It is therefore in the interest of major users of dryers, say in the commodities markets, to insist on innovation from equipment suppliers. Here are some random thoughts on how this could be done effectively and beneficially by all parties concerned.

When purchasing new dehydration systems, buyers could ask for some of following information from competing parties before making a final decision.

- How old is the technology being applied? Was there any innovation involved?
- What are the competing drying technologies and how is your system better?
- What is the energy consumption per unit of product produced?
- List thermal and electric energy costs separately as their unit costs are very different.
- Do they have an R&D team? Are they up-to-date on global developments in their area? Do they follow up on publications in related areas?
- Do they test and implement new ideas to save energy, improve quality, reduce dryer size, lower environmental impact?
- If the vendor company is small, common in this field, do they leverage on local academic institutions? Does management have the qualifications and vision to improve energy and ecological performance of their equipment?
- Can they guarantee a certain thermal efficiency of their equipment? Often the guarantee is limited to production rate and quality only.

I am sure our readers may have other criteria that should be considered as well. The objective should be to encourage innovation. If more major companies who buy major drying equipment insist on the above information, clearly they will benefit over the long haul and also will help introduce innovation in the whole dryer equipment market. There will be some added costs initially, which will, however, be paid back very quickly and many times over as well.
Even as the global economy slows down for some time, this may be a good time for both equipment manusfacturers and users to evaluae their drying technologies and try to innovate in a technoeconomic way. Improved technology need not be more expensive. Users of such equipment may have even greater incentive to innovate since they are the ones who must operate the equipment for several decades.

I hope that this change in philosophy will promote industrial utilization of new R&D results and thereby intensify innovation in this important field. It is a pity that many in industry think there is no opportunity or even need for innovation in drying equipment since the old technology works. Simply producing a dried product of given specifications does not make the equipment appropriate in this day and age.

It is my fervent belief that the coming decade will see some game-changing drying technologies in use around the globe.

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