Editorial

Thermal dehydration or drying is necessarily an interdisciplinary area which combines transport phenomena with material science. The latter is highly product-dependent. Design, analysis or optimization of industrial drying operations requires input from engineering as well as science. Thus, design of a state-of-the-art paper dryer today requires a blend of mechanical engineering, chemical engineering, paper physics and paper chemistry as a minimum. Innovative R&D can only be carried out by teams of specialists in each of these areas since no one can be reasonably expected to have the necessary expertise in so many diverse fields. This is true of other industrial sectors as well where dying is a key operation e.g. food processing, ceramics production, pharmaceutical processing etc. Development of cutting-edge technologies requires input from excellent engineering knowledge and deep scientific insight.

It is not surprising that many universities around the world are developing engineering programs with increased weight to science courses. This slow transition from engineering to science is most welcome. It must, however, be balanced carefully in view of the fact that the overall timeframe available to master the curriculum is still the same as it was decades ago. Today's graduates need to master more "tools" which are also dynamic in nature i.e. they need to be updated continuously. Thus, there is a danger that unbalanced programs may tip too far on one side and may not produce graduates with strong engineering background or a strong base in science. We may have neither excellent engineers nor outstanding scientists if this happens. Working together in teams is the ultimate answer to this dilemma. Excellent engineers and outstanding scientists working together on the same wavelength are likely to be more productive and innovative than engineering scientists who know engineering and science but not in adequate depth.

I have personally worked with engineers in different disciplines e, g. agricultural, chemical, electrical and mechanical engineering as well as different fields in science e.g. food science, paper physics, paper chemistry, wood science etc. Many of the research papers we published jointly would have not been possible without a truly inter-disciplinary approach. When I review papers submitted to this journal as well as to numerous other journals, I am always impressed by the fact that often the weak papers are by authors who need support from a different discipline but have not found it. I might even venture to say that almost all research in drying should be conducted by inter-disciplinary teams to have useful impact.

I would be pleased to hear form our readers their thoughts and experiences on this subject of combining the engineering approach with the scientific one for effective drying R&D.

Arun S. Mujumdar
Editor-in-Chief