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The environmental impact associated with the industrial activity in the Amazon will be smaller the greater the possibility to select and use industrial residues that, once transformed and controlled by the area of materials, are able to generate new products with proprieties comparable to their similar ones obtained by conventional methods. The raw material structural analysis that serves as a basis for the mineralogical evaluation related to the processing characteristics direct the possibility for commercial use of the product, as discussed on page 795. The advantageous use of renewable energies by the utilization of solar cells for the conversion of solar energy is strongly dependent on the development of new materials for solar cells, as well as to have better performance in fabrication and operation methods, with the objective to increase the conversion efficiency and the durability of the system actually used in practice. Processing of silicon by float zone with metallization by screen printing is discussed on page 775.

The development of new materials for special applications involves a deep understanding of materials science so that the requirements associated to engineering applications can be reached. As examples, the following can be cited: ceramic matrix composites that reach toughness values much superior than those of the conventional ceramic materials, page 778, possessing fibers in matrix with porous interfaces, composed of alumina; copper-based metallic matrix alloys reinforced with aluminum and silver rich precipitates, page 747, for which the mechanism of second particle formation is controlled by the type of interface and by the solid solution features in the matrix; and the advanced tribological properties achieved in titanium, on the surface of which a layer composed of carbonitrides is created by a plasma coating process, page 767. Finally, on page 754 a discussion is made on the way used to lubricate steel under cutting procedure influences the final quality of the workpiece with the objective to minimize the use of lubricant without interfering on the geometrical and dimensional parameters, to decrease the cutting time upon guaranteeing the quality of the surface finish and the surface integrity of the workpiece.

Cordially,

Paulo Emílio Valadão de Miranda

Editor-in-Chief