Foreword

Extending Anisotropy

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We have been brought up in the educational system with four- or five-grade evaluation. In this evaluation system, even if a boy or girl is very talented in math, his or her grade will not be evaluated as ten or fifteen, but as four or five at most. It is natural, then, that the boy or girl tries hard to overcome his or her weak subject, e.g., language or social study, rather than to extend his or her ability in math. Eventually, this will lead to cultivating isotropic human beings. This type of evaluation system with a ceiling grade is also adopted by many companies, and it gives high valuation to "straight-A" employees instead of those who show high anisotropy toward one specific area.

The significance of being a specialized R&D company is, I believe, to have a different valuation basis from manufacturing companies for researchers and engineers. It is true that isotropic capability is required for managers even in an R&D company. We need, however, to establish a unique evaluation system and corporate culture to appreciate a researcher or engineer who has made outstanding achievements in an important and difficult R&D project.

A substance with anisotropic properties is generally difficult to handle in a polycrystalline form. Yet, the texture engineering could extract the best performance from the material and make useful device elements. This special issue features the design of fabrication process for textured ceramics with aligned unique crystallographic axes or planes. Although the issue solely deals with the materials processing, the methodology may be a hint for extending anisotropic capability of ourselves.