

## 1.1. INTRODUCTION TO THE PROPERTIES OF TENSORS

$V$	volume
$p$	pressure
$u_i$	components of the displacement vector
$S_{ij}$	components of the strain tensor
$S_{\alpha}$	components of the strain Voigt matrix
$T_{ij}$	components of the stress tensor
$T_{\alpha}$	components of the stress Voigt matrix
$s_{ijkl}$	elastic compliances
$s_{\alpha\beta}$	reduced elastic compliances
$(s_{ijkl})^{\sigma}$	adiabatic elastic compliances
$c_{ijkl}$	elastic stiffnesses
$c_{\alpha\beta}$	reduced elastic stiffnesses
$\nu$	Poisson's ratio
$E$	Young's modulus
$\Theta$	temperature
$\sigma$	entropy
$\alpha_{ij}$	thermal expansion
$\lambda_{ij}$	temperature-stress constant
$\mathcal{U}$	internal energy
$\mathcal{G}$	Gibbs free energy
$C^{E,T}$	specific heat at constant stress and applied electric field
<b>E</b>	electric field
<b>D</b>	electric displacement
<b>H</b>	magnetic field
<b>B</b>	magnetic induction
$\epsilon_o$	permittivity of vacuum
$\epsilon$	dielectric constant
$\epsilon_{ij}$	dielectric tensor
$(\epsilon_{ij})^{\sigma}$	adiabatic dielectric tensor
$\chi_e$	dielectric susceptibility
$\eta_{ij}$	dielectric impermeability
$p_i$	pyroelectric tensor
$d_{ijk}$	piezoelectric tensor
$d_{i\alpha}$	reduced piezoelectric tensor
$d_{\alpha i}$	reduced inverse piezoelectric tensor
$(d_{ijk})^{\sigma}$	adiabatic piezoelectric tensor
$e_{ijk}$	piezoelectric tensor at constant strain
$Q_{ijkl}$	electrostriction tensor
$Q_{\alpha\beta}$	reduced electrostriction tensor
$\pi_{ijkl}$	piezo-optic tensor
$\pi_{\alpha\beta}$	reduced piezo-optic tensor
$p_{ijkl}$	elasto-optic tensor
$p_{\alpha\beta}$	reduced elasto-optic tensor
$R_{H\ ij\ k}$	Hall constant

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