

- basic relationships 114–16
- laws of 116, 130
- thermoelectric generators (TEG) 790
- thermophotonic (TPH) converter 136–40
- thermophotovoltaic (TPV) conversion
 - 135–6, 468–9
- thermophotovoltaic (TPV) generators 790
- thin-film progress and challenges 27–31
- thin-film PV materials 1034
- thin-film PV modules 53
- thin-film silicon solar cells 307–57
 - carrier collection 316
 - carrier generation 316
 - deposition techniques 341
 - design concepts 324–53
 - electronic modeling 333–41
 - generic device structure 325
 - grain enhancement 343–50
 - mechanical support 316–17
 - multicrystalline-Si substrates 320
 - non-Si substrates 321–4
 - optical properties 328
 - overview 307–10
 - processing considerations 350–3
 - review of current position 310–24
 - single-crystal Si substrates 317–20
 - summary from optical modeling 333
 - summary of types 318–19
 - surface structures 312
 - surface texture 311–12
 - thermodynamic considerations 311
- thin-film solar cells 27–9
 - CdTe *see* CdTe thin-film solar cells;
 - silicon thin-film solar cells
 - space applications 428–31
- thin-film technology 40
- thin-film transistor (TFT) 350
- third generation PV converters 148
- time variation of generated daily energy
 - 958
- TiO₂ 274
 - colloid preparation 678–9
 - dye fixation onto film 680
 - electrode preparation 679–80
 - electron transport 677–8
 - photoelectrode 666
 - solar cell, photocurrent–voltage curve
 - 674
- Tokyo A&T University 500
- total harmonic distortion (THD) 890,
 - 897, 899
- total irradiation 958
- TPH converter 148–9
- TPV converter 139, 148–9
- trackers *see* concentrators
- traction batteries 835
- transition metals (TM) 351
 - impurities in silicon 188–90
- translation equations to reference
 - conditions 719–20
- transmission line measurements 400
- transparent conducting oxide (TCO) 440,
 - 509–10, 539–40, 555
- transparent conducting oxide (TCO)-coated
 - glass substrate 664–6
- travel time of electron under short-circuit
 - conditions 531
- trichlorosilane 168
- tri-crystalline silicon (tri-Si) 211–13, 251
- Triodos Bank NV 1108
- triple-junction cells 426, 506
- triple-junction III-V semiconductor cells
 - 416
- triple-junction module 512
- triple-junction *nip* substrate-type solar cells
 - 547
- Tropical Rainfall Measuring Mission
 - (TRMM) 433
- true solar time 909
- TU Electric Power Park 467
- tubular-plate battery 844
- tunnel junction 548
- tunnel-junction interconnects (TJICs)
 - 379, 396–7
- twin boundaries 183
- Typical Meteorological Year (TMY)
 - 937–8, 960
- uncertainty
 - and solar radiation 915–20
 - spectral responsivity measurements
 - 742–4
- uncertainty estimates, reference cell
 - calibration procedures 726–7
- uncertainty parameters 919
- underdevelopment, breaking the chains of
 - 1046–8
- UNDP 1087–8
 - Sustainable Energy & Environment
 - Division (SEED) 1103–4
- UNEP 1088
 - Collaborating Centre on Energy and
 - Environment 1104
- uninterruptible power supplies (UPS) 34,
 - 835
- Union Carbide process
 - for semiconductor grade silicon 172–3
 - simplification 198–201
- United States, PV programs 1096–7
- University of New South Wales (UNSW)
 - 324