

arrays for dish and TPV applications. These cells are supplied to companies developing concentrating systems.

### 11.5.12 University of Reading

The University of Reading, United Kingdom, is researching a variety of concentrating approaches including point-focus Fresnel modules [78] and novel reflective trough modules [79].

### 11.5.13 Tokyo A&T University

Tokyo A&T University has been researching two and three-dimensional refractive static concentrators. These are designed to accept most of the diffuse light and, hence, are suitable for cloudy climates [80]. The two-dimensional lens has a concentration of 1.65X and the three-dimensional lens has a concentration of around 2X. While it might be concluded that this modest concentration is hardly worth the effort, it must be remembered that these systems use standard one-sun cells and the cell cost, which dominates module cost, is correspondingly reduced by these factors.

### 11.5.14 Zentrum fur Sonnenenergie und Wasserstoff Forschung Baden Wurttemberg (ZSW)

Zentrum fur Sonnenenergie und Wasserstoff Forschung Baden Wurttemberg (ZSW), in conjunction with a European consortium consisting of BP Solar, the Instituto de Energias Renovables (Spain) and the University of Crete, is developing a promising low-concentration system based on a 2X v-trough concentrator. The system uses polar-axis tracking that is driven by a passive, thermo-hydraulic system. This results in a simple, maintenance-free system that is projected to offer a 40% cost advantage over fixed, flat-plate modules [81].

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