

CHAPTER 1

- 1.1** Select one or more of the following modern items or devices and conduct an Internet search in order to determine what specific material(s) is (are) used and what specific properties this (these) material(s) possess(es) in order for the device/item to function properly. Finally, write a short essay in which you report your findings.

Cell phone/digital camera batteries

Cell phone displays

Solar cells

Wind turbine blades

Fuel cells

Automobile engine blocks (other than cast iron)

Automobile bodies (other than steel alloys)

Space telescope mirrors

Military body armor

Sports equipment

Soccer balls

Basketballs

Ski poles

Ski boots

Snowboards

Surfboards

Golf clubs

Golf balls

Kayaks

Lightweight bicycle frames

- 1.5** Classify each of the following materials as to whether it is a metal, ceramic, or polymer. Justify each choice: a) brass, b) magnesium oxide (MgO), c) Plexiglas, d) polychloroprene, e) boron carbide (B_4C), f) cast iron.