

# Thermoelectricity: From Atoms to Systems

## L3.4 Quiz

### Answers

- 1) What is the typical method used for thin film in-plane electrical conductivity measurements?
  - a.  $3\omega$  method
  - b. Thermoreflectance imaging
  - c. Van der Pauw method
  - d. Substrate removal and suspended film measurement
  - e. Hall effect measurement
  
- 2) Which is the typical method used for thin film cross-plane thermal conductivity measurements?
  - a.  $3\omega$  method
  - b. Thermoreflectance imaging
  - c. Van der Pauw method
  - d. Substrate removal and suspended film measurement
  - e. Hall effect measurement
  
- 3) What is the requirement for the transient ZT characterization of thin thermoelectric films?
  - a. Uniform temperature distribution at the contact electrode to the sample
  - b. Low contact resistance
  - c. High speed measurement of thermoelectric voltages
  - d. Adiabatic condition on the sample surface to be measured
  - e. All of the above