

**Frequently asked questions QUANTUM ELECTRONICS**  
**by K Thyagarajan, Physics Department, IIT Delhi, New Delhi.**

***Module 2: Frequently asked questions:***

1. Q: Is phase matching a sufficient condition for the generation of second harmonic?

**Answers of module 2 FAQs:**

A 1 : No. For the generation of the second harmonic, one needs to also have a coupling between the fundamental and second harmonic of appropriate polarization states; this is determined by the nonlinear tensor of the medium. Phase matching implies maximum conversion; even if phase matching is not exactly satisfied, second harmonic can still get generated.