

NAME :

Student learning outcomes survey

Rate your ability related to each learning outcomes of the course listed below :

Intermediate Learning Outcomes

- 1 * Derive the relation between the macroscopic polarization and the electric field (the so-called constitutive relations of nonlinear optics)
1-Very Little, 2-Some, 3-Quite a bit, 4-Very Much

Ne pas utiliser de séparateur des milliers.

- 2 * Cite nonlinear effects that arise in a 2nd and 3rd order nonlinear materials
1-Very Little, 2-Some, 3-Quite a bit, 4-Very Much

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- 3 * Knowledge about the basic properties of nonlinear susceptibility tensors
1-Very Little, 2-Some, 3-Quite a bit, 4-Very Much

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- 4 * Manipulate the nonlinear susceptibility tensor components and, with given incident fields, calculate the components of nonlinear polarisation vector.
1-Very Little, 2-Some, 3-Quite a bit, 4-Very Much

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- 5 * Determine the phase matching conditions for a given nonlinear interaction, and exploit the birefringence properties of materials to fulfill the phase matching condition
1-Very Little, 2-Some, 3-Quite a bit, 4-Very Much

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- 6 * Derive and solve the nonlinear wave equation in a parametric situation under the undepleted pump approximation
1-Very Little, 2-Some, 3-Quite a bit, 4-Very Much

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Final Learning Outcomes

- 7 * Describe the origin of the nonlinear optical interactions that lead to the generation of novel optical frequencies
1-Very Little, 2-Some, 3-Quite a bit, 4-Very Much

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- 8 * Evaluate and calculate 2nd and 3rd order nonlinear interaction performances/efficiencies under approximations that should be specified, explained and justified
1-Very Little, 2-Some, 3-Quite a bit, 4-Very Much

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- 9 * Design and optimize a 3 or 4 wave mixing configuration to meet given performances. The approach and values shall be justified and presented in a written or oral report.
1-Very Little, 2-Some, 3-Quite a bit, 4-Very Much

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- 10 * Model 2nd and 3rd order nonlinear interactions under assumptions to be specified and implement related numerical simulations.
1-Very Little, 2-Some, 3-Quite a bit, 4-Very Much

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