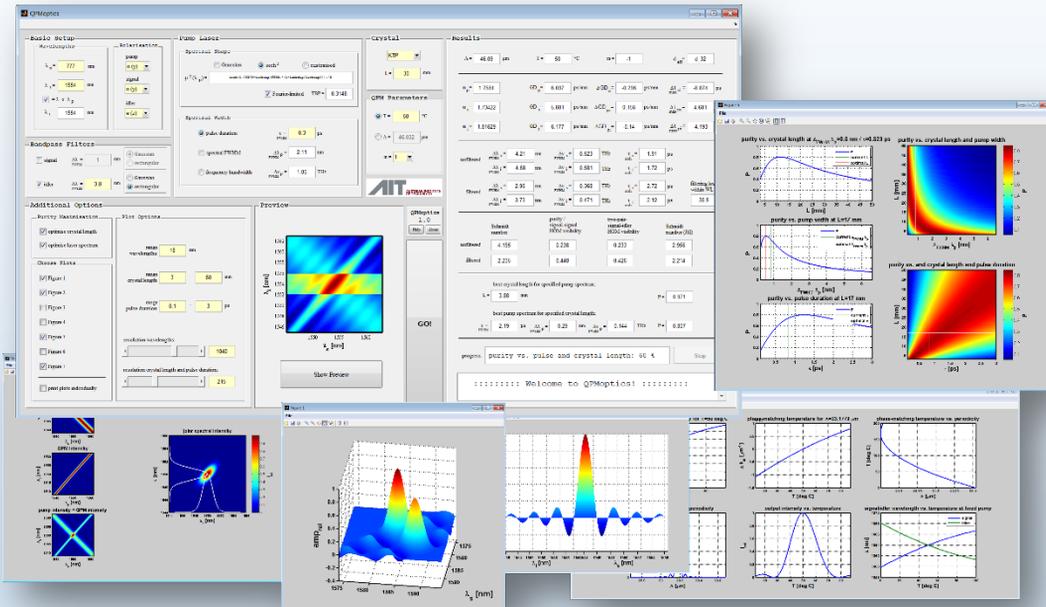


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QPMoptics

Quasi-Phase-Matching // Quantum-Purity Maximisation



QPMoptics is a scientific software which is able to simulate any experimental setup based on photon-pair creation by spontaneous parametric down-conversion in periodically poled crystals. Moreover, our software is able to optimise experimental parameters for the sake of high down-conversion efficiency and quantum performance. Given the optional input of any relevant individual experimental setup, the large number of output parameters and plots and the user-friendly intuitive graphical user interface, this software can be a helpful tool to any experimentalist who uses the quasi-phase-matching technique to generate collinearly propagating photon pairs.

- Simulates photon-pair generation in **seven nonlinear crystals** (including ppKTP and ppLN)
- **Gaussian and sech² pulses** as well as customised laser spectrum
- Gaussian and rectangular **bandpass filtering**
- **Phase-matching conditions**, poling periodicity, temperature tuning
- Refractive indices, group delay and temporal walk-off
- **Spectral distribution** of generated photons
- Schmidt number, **purity and Hong-Ou-Mandel visibility**
- **Optimises crystal length and pump spectrum** for maximal purity
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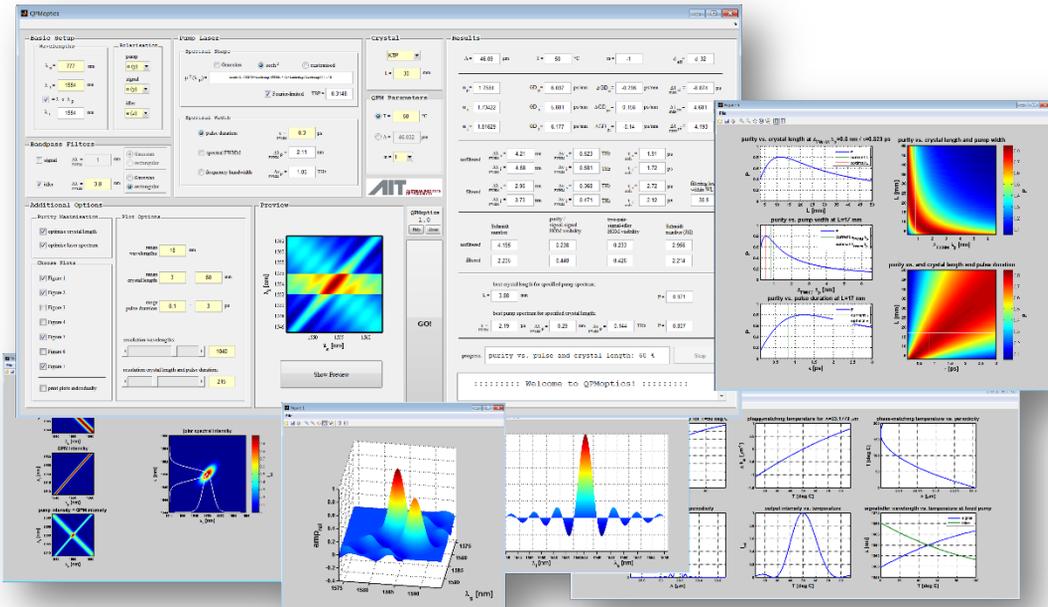
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