

## **BSI products vs. home-built pulse shapers**

Thinking about pros and cons of building a pulse shaper on your own rather than purchasing a commercial instrument from Biophotonic Solutions, Inc. (BSI)?

Here are a few points to keep in mind:

- **The time it takes to design, build, and test a pulse shaper**  
This is the time you would take away from your other priorities and focus on technical details that BSI has mastered over the last ten years. BSI stands behind their instruments to be the best available on the market. They are also customized to deliver the optimal performance when bundled with the customer's laser source. Do you really have time and man power to "reinvent the wheel"? And this R&D effort is still to be paid for!
- **Components' validation**  
BSI has delivered multiple systems and has built its performance standards based on the hands-on experience with many items of supposedly similar quality. By purchasing components in large quantities from selected manufacturers, BSI has a luxury to test those, compare, and return items that do not conform to the standards. Having only one component (SLM, grating, etc.) purchased for a home-built system, there is no good way of checking if its performance is adequate.
- **Software development**  
Building a pulse shaper is only a start! To make a fully functional system, one still needs to develop software that controls the SLM and interfaces it with detection such as a spectrometer. One of the essential steps is to devise the pulse shaper calibration routines. Another step is to develop and implement pulse compression algorithm. For someone starting from scratch, it would usually take over a year to develop a functional prototype, and he or she would still need to cross-validate the results. BSI provides software that includes both automated calibration capabilities and push-button pulse compression algorithm. The built-in MIIPS<sup>®</sup> method for pulse compression is a proven technique accepted by the ultrafast optics community and is now used in 13 different countries.
- **Software updates - stay on the edge**  
Software development and optimization is a full-time job! BSI is continuously enhancing its software capabilities and expanding the portfolio of supported instruments. BSI's customers have access to the latest developments through the MIIPS<sup>®</sup> software upgrades.
- **Customer support**  
BSI's pulse shapers come with a warranty and customer support! As students leave the group for their next job, one does not need to worry about maintaining the pulse shaping expertise. BSI can be contacted at any time and due to the high-level automation of all essential routines, the learning curve to use a pulse shaper from BSI is minimal.