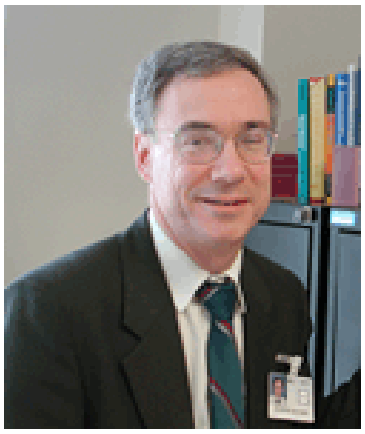
Joseph S. Hayden



Title: Overcoming technical challenges and moving into the future with laser glass

Abstract: The long term commercial potential for solid state laser gain materials based on glass has only been possible by constant technological developments that have overcome otherwise "market lethal" performance and cost issues. We will discuss a few examples that resulted in the development of completely new manufacturing processes that expanded the laser glass operation window and made possible the construction of large laser systems such as the US National Ignition Facility and the French Laser Mégajoule. In parallel, through compositional modifications and identification of special post processing treatments, new active glasses with tailored properties have been continuously developed for specific laser architectures. We will also discuss current research activity directed at finding customized laser glass compositions for the next generation of high peak power (e.g. exawatt class) laser systems.

Biography: Joseph S. Hayden has a BS in Physics from Saint Joseph's University and a PhD in Chemical Physics from Brown University. He joined the Schott Group in 1985, where he has worked in glass composition and process development with emphasis on laser, nonlinear and technical glasses. He is presently a Research Fellow at SCHOTT's Research and Technology Development site in Duryea, Pennsylvania, USA.