SYNTHESIS AND CHARACTERIZATION OF NOVEL \textit{CAP-LINKER-CAP} TYPE STRUCTURES AS TWO-PHOTON ABSORPTION PHOTOINITIATORS

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Owing to great advances in the field of two-photon absorption (2PA) microscale rapid prototyping (RP) techniques based on this principle have been pushed to the edge of commercialization in recent years. Nevertheless, a strong need for highly efficient two-photon absorption photoinitiators (2PA-Pi) still persists \cite{1}.

Scheme 1: \textit{Cap-linker-cap} motif

Based on findings in our group \cite{2} our current research focuses on the improvement of the 2PA-Pi efficiency of promising \textit{cap-linker-cap} type structure 1 (linker = thiophene 2a, cap = triphenylamine) by (i) increasing the electron density of the linker and (ii) planarizing both linker and cap. To ensure solubility in the respective monomer solution hexyl-residues (Hx) were applied. Synthesis and photo-physical characterization as well as 2PA-Pi-structuring tests of this series of compounds will be presented.

\begin{itemize}
\item \textsuperscript{1} M. Pawlicki, et al., \textit{Angewandte Chemie International Edition} 2009, 48, 3244-3266.
\item \textsuperscript{2} B. Holzer; poster presentation ESPS 2014, Vienna, Austria
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