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# Synthesis and photophysical properties of novel 1,8-naphthalimide light-harvesting antennae based on benzyl aryl ether architecture

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## ABSTRACT

Two novel benzyl aryl ether light-harvesting antennae accomplishing high effective energy transfer, core and peripherally decorated with fluorescent 1,8-naphthalimide units were successfully synthesized. The peripheral blue-emitting benzyl aryl ether intermediate wedge showed considerable probe potential for determination of water content in organic solvents probably as a result of a TICT process. The core of one of the two light-harvesting antennae was configured on the “*fluorophore-spacer-receptor*” format. Due to the simultaneous operation of FRET and PET processes that system showed excellent pH sensing characteristics and high potential as a probe for monitoring the pH variations in environmental and biological samples.

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**Keywords:** Light-harvesting FRET antennae; 1,8-Naphthalimide; Energy transfer; Photoinduced electron transfer (PET); pH probe.

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