

ABSTRACT

This bachelor thesis is focused on using levoglucosenone in the synthesis of the naphthoquinone containing compounds. Levoglucosenone is a versatile and easily available substance which can be prepared by pyrolysis of renewable cellulose-containing materials. The synthesis of the target compound begins with the preparation of the substrate for the tandem reaction (propargyl ether) in three steps. The following key steps of the synthesis include palladium-catalyzed tandem cyclization/Suzuki cross coupling and subsequent Heck reaction. Oxidation of the prepared methoxy-substituted naphthalene yields the *o*-naphthoquinone, which has a similar structure as some naturally occurring substances with naphthoquinone skeleton, e.g. mansonone D and populene C.

Key words: *Synthesis, naphthalenes, naphthoquinones, levoglucosenone, catalysis, polycyclic compounds*