

SHORT
COMMUNICATIONS

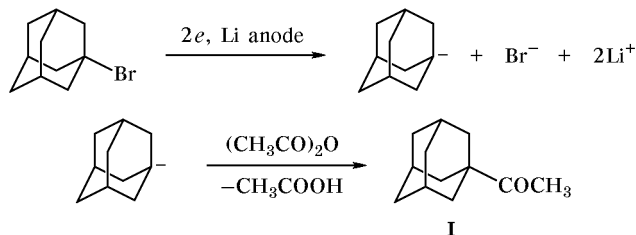
Synthesis of Methyl 1-Adamantyl Ketone
by Electrochemical Reduction of 1-Bromoadamantane
in the Presence of Acetic Anhydride

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We previously reported [1] that methyl 1-adamantyl ketone (**I**) cannot be obtained at a magnesium electrode because of formation of adamantyl cations which react with nucleophilic species. We have found that the use of lithium electrode makes it possible to synthesize ketone **I** by electrochemical reduction in the presence of acetic anhydride.



A nickel cylinder (cathode), 50 mm in diameter and 80 mm in height, equipped with an internal lithium

plate ($S = 15 \text{ cm}^2$; anode), was charged with 33 mmol of 1-bromoadamantane, 1 mmol of tetraethylammonium iodide, and 50 ml of dimethylformamide. To the resulting solution 120 mmol of acetic anhydride was added, and electric current (3–4 C) was passed through the mixture at 0–10°C. Excess acetic anhydride was hydrolyzed in acid medium. The product was extracted into ether and was purified by column chromatography or vacuum distillation. Yield of methyl 1-adamantyl ketone (**I**) 50%, mp 52–53°C [1]. The structure of product **I** was proved by the IR and ^1H NMR spectra and elemental analysis, and its purity was checked by TLC.

REFERENCE

1. Rakhimov, A.I. and Cherepanov, A.A., *Russ. J. Org. Chem.*, 1999, vol. 35, no. 4, p. 619.