**OMORODION OSAROGIE YOMA**

**COMPUTER ENGINEERING 19/ENG02/051**

**CHM 102 ASSIGNMENT**

1.

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| **ORGANIC COMPOUND** | **IUPAC NAME** |
| CH3OCH3 | Methoxymethane |
| CH3CH2OCH2CH3 | Ethoxyethane/Diethyl ether  |
| (CH3CH2CH2CH2)2O | Dibutyl ether |
| CH3CH2OCH3 | Methoxyethane |
| CH3CH2CH2OCH2CH3 | 1-Propoxypropane |

2. **Properties of ethers**

An ether molecule has a net dipole moment. We can attribute this to the polarity of C-O bonds.

The boiling point of ethers is comparable to the alkanes. However, it is much lower compared to that of alcohols of comparable molecular mass. This is despite the fact of the polarity of the C-O bond.

The miscibility of ethers with water resembles those of alcohols.

Aromatic ethers undergo halogenations, for example; bromination, when we add a halogen in the presence or absence of a catalyst.

3. **Methods of preparing ethers**

DEHYDRATION OF ALCOHOLS: In the presence of sulphuric acid, dehydration of ethanol yields Ethoxyethane at 413K. This is an ideal method of preparation through primary alcohols. Preparation of ethers by dehydration of an alcohol is a nucleophillic substitution reaction.

2C2H5OH H2SO4.413K C2H5OC2H5

WILLIAMSON’S SYNTHESIS: When an alkyl halide reacts with sodium alkoxide, an ether is formed. This reaction is known as Williamson’s synthesis. The reaction generally follows the SN2 mechanism for primary alcohols. 

4. **Uses of ethylene oxide**

Production of ethylene glycol

Healthcare sterilant

Production of acrylonitrile