THE PARTIAL OXIDATION OF METHANE AND ETHANE ON WELL-CHARACTERIZED VANADIUM OXIDE SURFACES

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Vanadium oxide ordered thin films were grown by condensing vanadium metal onto gold single crystal surfaces then oxidizing it. Films of V_2O_5 could also be produced by condensing V_2O_5 onto gold. After characterization by various surface science techniques, chemisorption studies were carried out to study the bonding of CH_4, C_2H_6 and O_2. A high pressure cell was then used to carry out partial oxidation studies and the results were correlated with those obtained on silica supported high surface area V_2O_5 catalyst.