USING THE UNUSUAL OPTICAL PROPERTIES OF BIPERIODIC METALLIC MESHES TO FOLLOW THE CHEMISTRY OF METHOXY RADICAL ADSORBED ON THE METAL SURFACE

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Transmission spectra were recorded from the infrared to the ultraviolet for biperiodic copper meshes with different channel diameters (1.1 - 6.5 $\mu$m) but the same channel-to-channel spacing (12.5 $\mu$m). The recorded infrared spectra show band pass characteristics that vary dramatically with the size of the channels. Infrared transmission spectra were then recorded (FTIR) at various times after exposure to liquid methanol. These spectra (at room temperature and in air) show methoxy radical adsorbed to the copper surface reacting to produce formate.