# Metal on metal heteroepitaxy: Characterisation of metal and alloy monolayer films

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Epitaxial monolayer metal films on unlike substrates are of increasing interest for both practical and academic reasons.On the academic side they are suitable model systems to investigate the mechanisms of thin film and crystal growth,to establish the properties and stability of interfaces as well as to study the dependence of the physical properties of films on dimensionality(2D versus 3D).On the practical side the choice of specific film/substrate combinations leads to the design of materials with new (e.g. electronic, magnetic and catalytic) properties,which used in nanometer devices also minimise material consumption. This seminar is a demonstration of the surface science approach by a multi-technique investigation of the physical properties of Cu,Ag and Au films on a Ru(0001) substrate. The discussion will also be extended to binary monolayer alloy films of these metals as well as to the influence of substrate surface contaminants(e.g. oxygen) on the films.