INPHAZE

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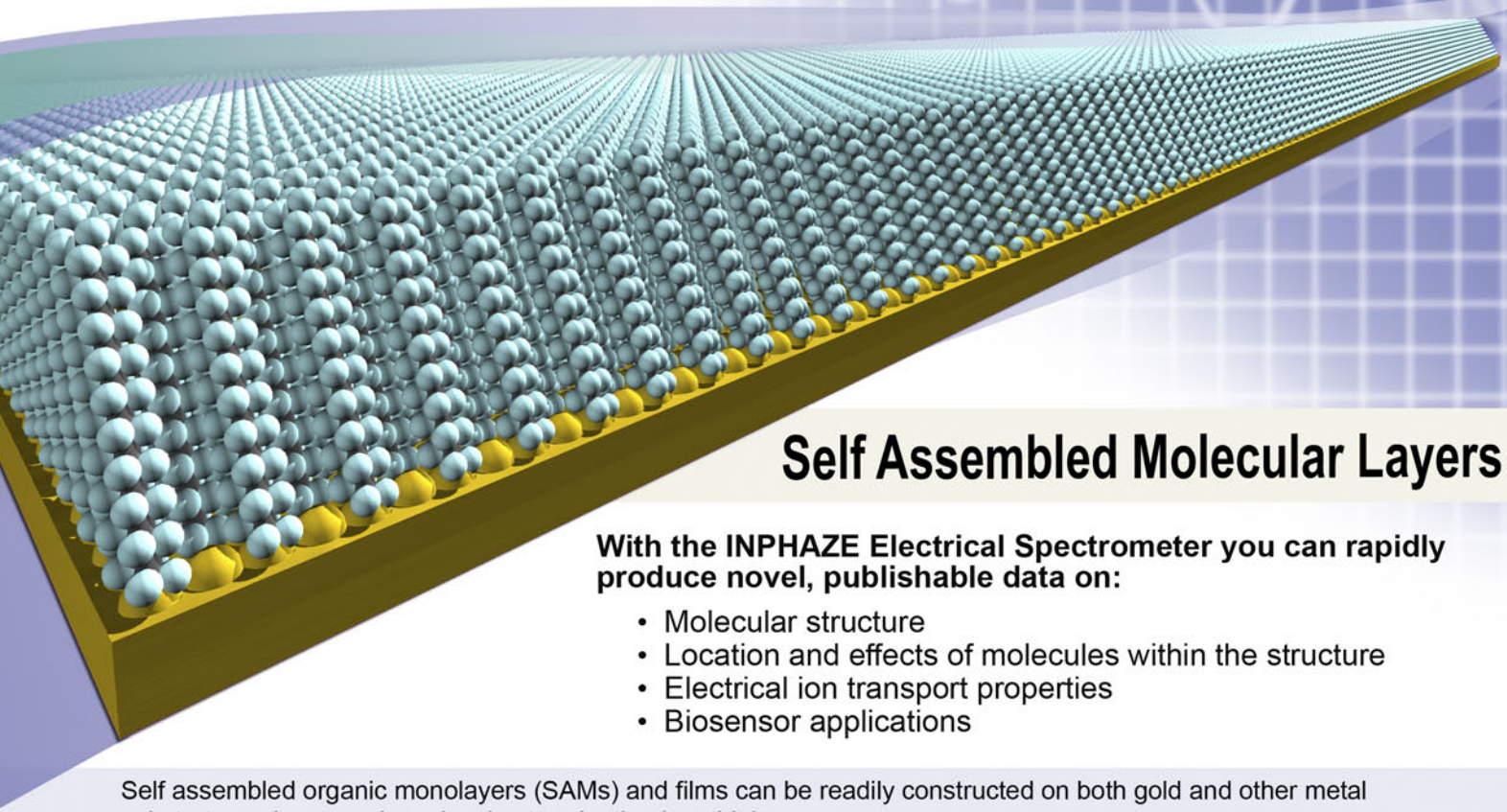
High Resolution Impedance Technology



Self Assembled Molecular Layers

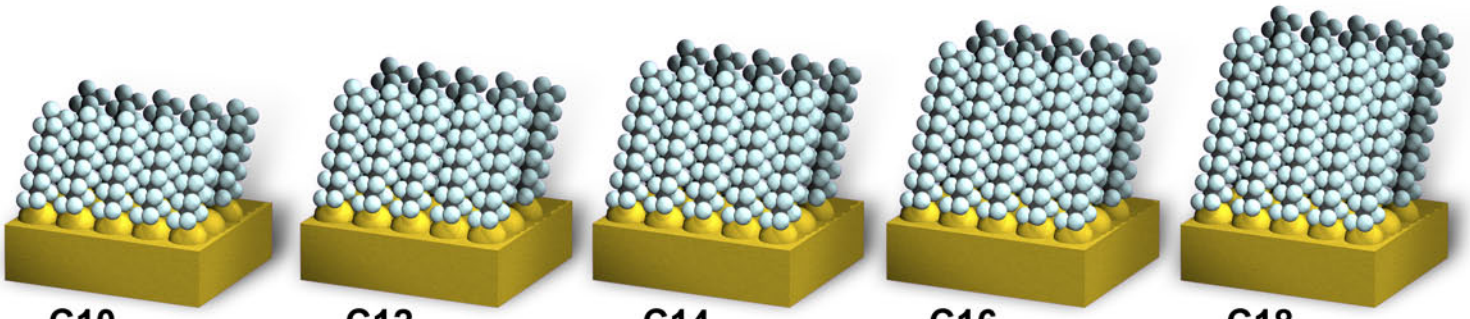
With the INPHAZE Electrical Spectrometer you can rapidly produce novel, publishable data on:

- Molecular structure
- Location and effects of molecules within the structure
- Electrical ion transport properties
- Biosensor applications

Self assembled organic monolayers (SAMs) and films can be readily constructed on both gold and other metal substrates using organic molecules terminating in a thiol group.

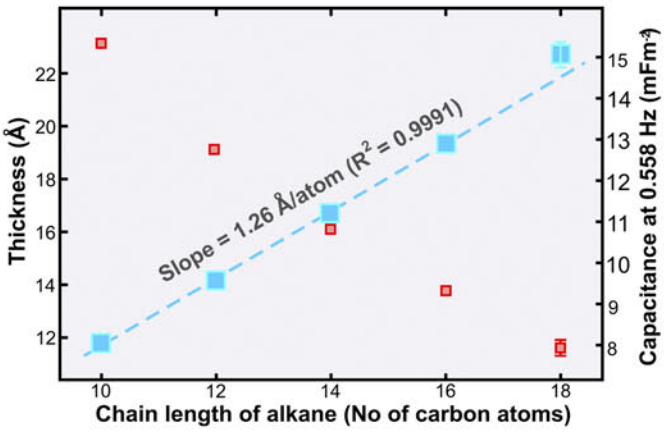
Alternatively SAMs can be constructed using direct Si-C links on the surface of silicon wafers.

Functionalised surfaces can be obtained by self assembly of alkyl molecules terminating in COOH or NH2 groups. This allows attachment of proteins or other larger molecules.



Electrically the composite film can be subdivided into layers containing individual groups such as terminal COOH moieties and proteins attached to such groups and the **INPHAZE** low frequency Spectrometer can charcterise the dielectric properties of these layers individually.

The addition of adsorbed molecules or additional layers of molecules attached to the base layer can then be investigated.



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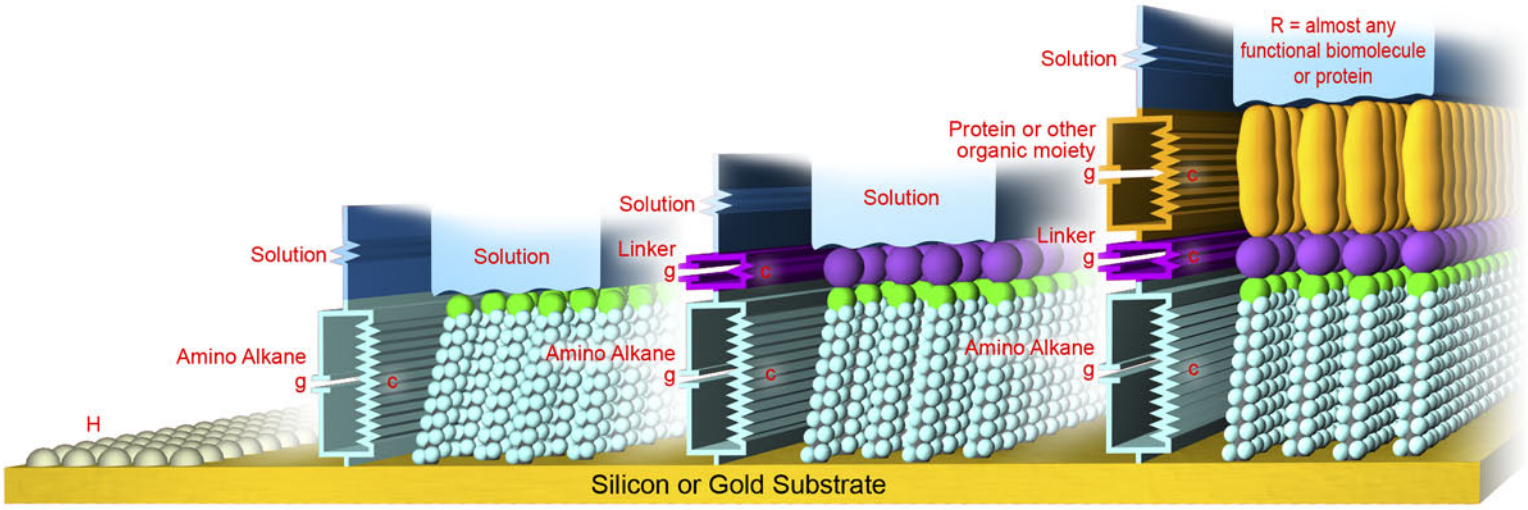
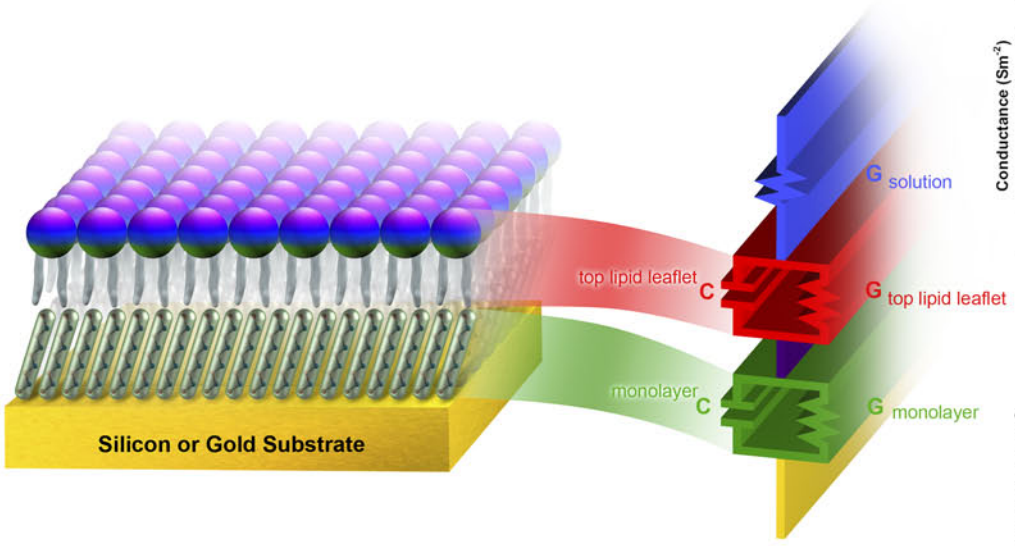
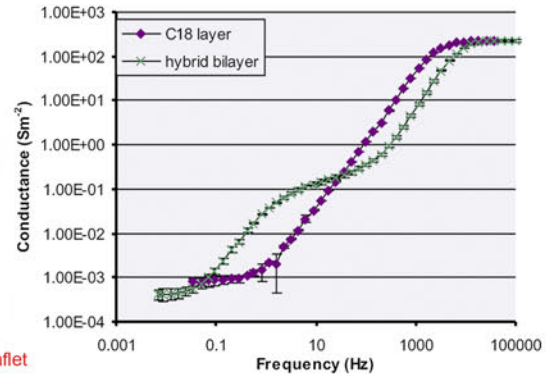
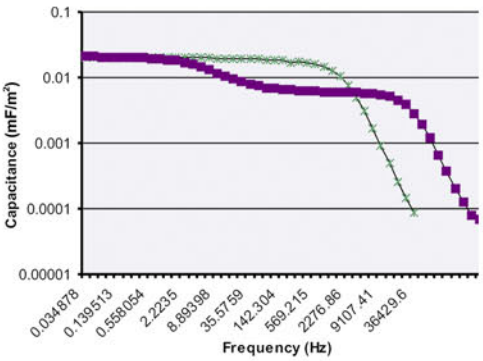
Supported lipid films assembled on substrates can also be readily analyzed using the INPHAZE Electrical Spectrometer



Hydrosilytion of the Si surface	Reaction of a protected amino-alkane with the Si-H surface to form monolayer	Deprotection of the amino-group	Coupling of an organic or biomolecule with sulfhydryl group to the linker







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