

## Surface X-ray scattering of platinum surfaces

The importance of platinum as an electrocatalyst especially in the fuel cells is undeniable. This seminar is an attempt to describe the importance of surface structures in one of the most important reactions in the fuel cells which is oxidation of CO molecule on the platinum surface. This reaction is the main reaction in the direct methanol fuel cells (DMFC). There have been great efforts to study and understand the possible mechanisms of this reaction on the catalyst surfaces and finding the active sites and the optimum situation for this reaction. X-ray scattering technique is a very useful tool in investigating the surface of crystals as well as determining subsurface structures which is advantageous in this case. An introduction to the theoretical and instrumental aspects of this method will be discussed. At the end, different structural changes in the platinum surface and bulk as a result of CO molecule adsorption in different kind of platinum surfaces will be shown along with some possible mechanism for these changes.

### References

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