



## **Metal nanoparticles, synthesis, functionalization and applications.**

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### Course description:

During this lecture, it will be explained how the properties of the matter change with size. The properties of the particles at the nanometer size will be described, with more focus on the metal nanoparticles (redox, optical, catalytic and magnetic properties). Different methods for nanoparticle synthesis will be presented. It will be explained why and how it is important to functionalize the nanoparticles. Deposition and assembly of nanoparticles on surfaces will be explained. Finally, different examples of emerging applications of nanoparticles in different fields will be presented: catalysis, photocatalysis, electrocatalysis (fuel cells), optics, sensors, imaging, cancer therapy...

| <b>TERMINY WYKŁADÓW</b> |                       |                |                 |
|-------------------------|-----------------------|----------------|-----------------|
| <b>Data</b>             | <b>Dzień tygodnia</b> | <b>Godzina</b> | <b>Sala</b>     |
| 05.11.2012              | Poniedziałek          | 12-15          | LUWR (Chemia A) |
| 06.11.2012              | Wtorek                | 14-15          | LUWR (Chemia A) |
|                         |                       | 17-19          | 222 (Chemia A)  |
| 07.11.2012              | Środa                 | 12-15          | LUWR (Chemia A) |
| 08.11.2012              | Czwartek              | 12-15          | LUWR (Chemia A) |
| 09.11.2012              | Piątek                | 12-15          | LUWR (Chemia A) |