Table of Contents

[Chapter 5 – A survey of new developments between X-ray spectroscopy and machine learning 1](#_Toc116911328)

[Supervised 1](#_Toc116911329)

[Timoshenko, 2017 1](#_Toc116911330)

[Timoshenko, 2019 1](#_Toc116911331)

[Matching, Zheng, 2018 1](#_Toc116911332)

[RF, Zheng 1](#_Toc116911333)

[Carbone x2 1](#_Toc116911334)

[Structural info in XANES, Usoltsev, 2020 1](#_Toc116911335)

[Unsupervised 1](#_Toc116911336)

[Routh 1](#_Toc116911337)

[Guda 1](#_Toc116911338)

[Tetef 1](#_Toc116911339)

[Forward Problem 1](#_Toc116911340)

[Penfold and Rankine x2 1](#_Toc116911341)

[References 1](#_Toc116911342)

# 

# Chapter 5 – A survey of new developments between X-ray spectroscopy and machine learning

## Supervised

### Timoshenko, 2017

* Predict coordination of Pt nanoparticles from XANES (not EXAFS)

### Timoshenko, 2019

### Matching, Zheng, 2018

### RF, Zheng

### Carbone x2

### Structural info in XANES, Usoltsev, 2020

* Used PCA to determined number of MCR (multivariate curve resolution) components

## Unsupervised

### Routh

### Guda

### Tetef

## Forward Problem

### Penfold and Rankine x2

* Predict XANES spectra from coordination using DNN

## References