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## Laser Photodetachment Threshold Spectroscopy on Radioactive Negative Ions

Laser Photodetachment Threshold Spectroscopy on  
Radioactive Negative Ions  
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Recently, the Laser Photodetachment Threshold Method was adapted for the measurements of radioactive negative ions. GANDALPH (Gothenburg ANion Detector for Affinity measurements by Laser PHotodetachment) apparatus was designed to study radioactive isotopes. And is placed at CERN at the ISOLDE [1] facility. The measurement of electron affinity of  $^{128}\text{I}^-$  was a first demonstration of capacity to determine the isotope shift of iodine [2], and it was followed by Electron Affinity measurement in Astatine [3]. With implementation of ion trap MIRACLS (Multi Ion Reflection Apparatus for Collinear Laser Spectroscopy) [4] it opens up the opportunity for future studies of the fundamental properties of negatively charged radioactive isotope such as Chlorine [5] and Polonium as next.

Due to our expertise in isotope shift measurements in electron affinities of Chlorine [6] we were invited to join the MIRACLS group for trapping the Chlorine anions during summer 2022. Based on results of this collaboration I submitted application for funding at Latvian Council of Science. Our project is supported for next 3 years. In my presentation I'll report on our experimental facility, results of latest experiments and vision for next experiments in CERN and at University of Latvia.

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### References

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### Type of contribution

Talk

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