

## Curriculum Vitae

### Personal information:

Name: **Zsuzsanna Mácsik**  
Place and date of birth: Szekszárd, Hungary, February 16th 1983  
Current degree: M.Sc. in Environmental Engineering  
Grade: Excellent (4.78/5)  
E-mail: [macsikzsu@gmail.com](mailto:macsikzsu@gmail.com)

### Work experience

- Sept 2009-  
Present
- Research assistant and PhD student at the **Institute of Isotopes of the Hungarian Academy of Sciences, Radiation Safety Department, ICP-MS** (inductively coupled plasma mass spectrometry) **Laboratory**, Budapest, Hungary ([http://www.iki.kfki.hu/index\\_en.shtml](http://www.iki.kfki.hu/index_en.shtml)).
- Development and application of radioanalytical methods for the determination of actinides in environmental samples for Safeguards purposes using alpha spectrometry and ICP-MS,
  - Development and application of microanalytical methods for the determination of alpha emitting and fissile materials in particles originating from swipe samples using laser ablation ICP-MS,
  - Examination of various samples (such as geological, archeological, environmental samples) for the determination of metal and non-metal elements.
- Nov 2008-  
May 2009
- Fellow at the **International Atomic Energy Agency (IAEA), Safeguards Analytical Laboratories (SAL), Clean Laboratory**, Seibersdorf, Austria.
- Development and comparison of radioanalytical methods for the determination of plutonium in environmental samples with TEVA<sup>®</sup> extraction chromatographic and AG MP-1<sup>®</sup> ion-exchange resin,
  - Energy and efficiency calibration of the alpha spectrometry system of the Clean Laboratory,
  - Method development for the determination of low level <sup>238</sup>Pu in environmental samples by alpha spectrometry using ICP-MS results of <sup>239</sup>Pu and <sup>240</sup>Pu.
- Jan 2007-  
Sept 2007
- Student work at the **Institute of Nuclear Techniques, Budapest University of Technology and Economics**, Budapest, Hungary (<http://www.reak.bme.hu/en/home.html>).
- Determination of actinides in environmental samples by radioanalytical separation methods and alpha spectrometry,
  - Literature studies in the field of International Safeguards.

## Education:

- Sept 2009 PhD student at the **Institute of Chemistry, Faculty of Science, Eötvös Loránd University**. Supervisor: Dr. Nóra Vajda ([http://www.radanal.kfkipark.hu/pics/NoraVajda\\_CV.pdf](http://www.radanal.kfkipark.hu/pics/NoraVajda_CV.pdf)).  
Research topic: *Examination of actinides in safeguards swipe samples using nuclear and mass spectrometry methods.*  
Expected graduation date: the end of 2011.
- Sept 2007-  
Sept 2009 PhD student at the **Graduate School of Physics, Faculty of Natural Sciences, Budapest University of Technology and Economics** at the **Institute of Nuclear Techniques**. Supervisors: Dr. Nóra Vajda (Sept. 2007–Oct. 2008), Dr. Imre Szalóki (Oct. 2008–Sept. 2009).  
Research topic: *Development of radioanalytical methods for the determination of actinides in environmental samples.*
- 2002-2007 M.Sc. studies at the **Budapest University of Technology and Economics, Faculty of Chemical Technology and Biotechnology**. M.Sc in Environmental Engineering. Supervisor: Dr. Péter Zagyvai ([http://www.reak.bme.hu/en/staff\\_members/dr\\_peter\\_zagyvai.html](http://www.reak.bme.hu/en/staff_members/dr_peter_zagyvai.html)).  
Thesis topic: *Nuclear spectrometric analysis (gamma spectrometry) of aerosol samples originating from the area of the Budapest Training Reactor and the Nuclear Power Plant of Paks.*

## Professional experience (important conferences, courses, awards):

### Important conferences, seminars:

**European Winter Conference on Plasma Spectrochemistry**, 29 January - 4 February 2011  
Zaragoza, Spain

The title of the poster: *Localization and analysis of single uranium particles by LA-ICP-SFMS*

**Symposium on International Safeguards: Preparing for Future Verification Challenges**, 1-5  
November 2010, Vienna, Austria

The title of the poster: *Method development for analysis of single hot particles in Safeguards swipe samples*

**Seminar at the Safeguards Analytical Laboratories of the International Atomic Energy Agency**, 15 May 2009, Seibersdorf, Austria

The title of the presentation: *IAEA Fellowship at the Clean Laboratory, SAL - 10/11/08 – 08/05/09*

### Courses:

**Alpha Analyst / Apex Alpha Spectroscopy Software Training Course**, 2-3 December 2008,  
Seibersdorf, Austria

**Genie 2000 Advanced Gamma Spectroscopy Software Training Course**, 4-6 November 2008,  
Schwadorf, Austria

**International Training Course on Implementation of State Systems of Accounting for and Control of Nuclear Material**, 23 June - 4 July 2008, Moscow, Russia

The title of the presentation held at the course: *Experiences on environmental sampling and analysis for safeguards purposes in Hungary.*

**ESARDA's (European Safeguards Research and Development Association) Training Course on Nuclear Safeguards and Non Proliferation**, 5-9 March 2007, Ispra, Italy.

**Awards:**

*Hevesy Prize* awarded to young scientists, special award

**National Annual Radiochemistry Conferences 2010** (Őszi Radiokémiai Napok 2010), 20-22 October 2010, Keszthely, Hungary

The title of the presentation: *Method development for analysis of single hot particles in Safeguards swipe samples.*

*Hevesy Prize* awarded to young scientists, 2nd place

**National Annual Radiochemistry Conferences 2009** (Őszi Radiokémiai Napok 2009), 14-16 October 2009, Pécs, Hungary

The title of the presentation: *Determination of plutonium in environmental samples for Safeguards purposes.*

*ENEN Prize* – awarded to 3 PhD students for the presentation given at and the paper submitted to the ENEN PhD Event 2008

**International Youth Nuclear Congress 2008**, 21-26 September 2008, Switzerland, Interlaken

Participation in ENEN (European Nuclear Education Network Association) PhD Event 2008,

The title of the paper and the presentation: *Development of radioanalytical and microanalytical procedures for the determination of actinides in environmental samples.*

**Language skills:**

**Hungarian:** mother tongue

**English:** upper level (C1)

**German:** basic level (B1)

**Italian:** basic level (A2)