

COST Action CA20129

**MultIChem**



**The Second Conference**  
*" Multiscale Irradiation and Chemistry  
Driven Processes and Related Technologies "*

**MultIChem 2023**

**BOOK OF ABSTRACTS**

Vila Lanna  
Prague, Czech Republic  
April 26-28, 2023

<https://www.jh-inst.cas.cz/multichem/>



## **Preface**

Dear colleagues,

We welcome all participants to the 2<sup>nd</sup> conference of the COST Action CA20129 “Multiscale Irradiation and Chemistry Driven Processes and Related Technologies” (MultiChem 2023). We are very pleased to host this meeting in Villa Lanna, a representative venue of the Czech Academy of Sciences in Prague.

MultiChem 2023 promises to be an exciting and stimulating conference with 30 oral and 30 poster presentations. It topically covers all areas that are of interest to the MultiChem COST action. At this meeting, in addition to academic partners, we have included contributions from industrial and clinical practice. The conference will also host the 2<sup>nd</sup> MultiChem Management Committee meeting which will happen in a hybrid in-person and online form.

We wish you a successful meeting and a pleasant stay in Prague!

Alexey Verkhovtsev  
Juraj Fedor  
(MultiChem 2023 chairs)

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## Conference website

<https://www.jh-inst.cas.cz/multichem/>

Up-to-date information about the MultiChem 2023 conference and the COST Action MultiChem is available on the webpage <http://mbnresearch.com/ca20129-multichem/main>

## Conference e-mail

[multichem@jh-inst.cas.cz](mailto:multichem@jh-inst.cas.cz)

# Abstracts for poster contributions

# Study of elastic electron scattering by anaesthetic molecules in the gas phase

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We have investigated elastic electron scattering cross sections from anaesthetics molecules in the gas phase for intermediate impact energies. Measurements of the elastic differential cross sections (DCS) have been performed with a crossed electron-target beam apparatus UGRA [1], settled at the Institute of Physics in Belgrade. Relative DCSs were put on the absolute scale by using the relative flow technique [2]. Calculations are based on the Independent Atom Model (IAM) by using the screening corrected additivity rule (SCAR) technique and including interference effects. Measurements have been carried out for anaesthetics molecules, such as sevoflurane [1], isoflurane and desflurane. Absolute DCSs for elastic electron scattering from isoflurane at 100 eV are presented in Figure 1.

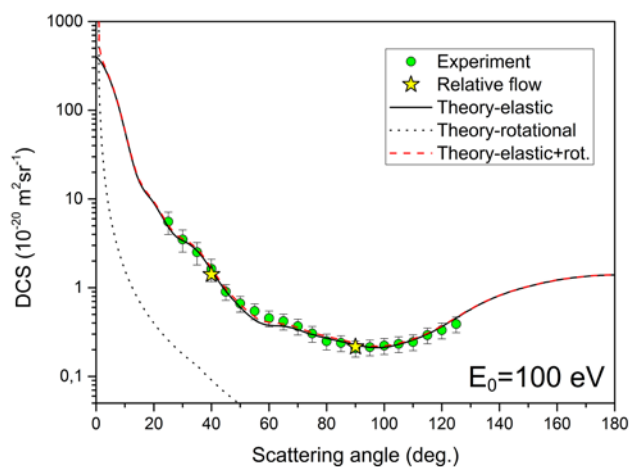


Figure 1: Angular dependence of the DCSs for elastic electron scattering from isoflurane at 100 eV. Circles represent absolute experimental differential cross sections; stars represent absolute values obtained by relative flow method and lines represent calculations.

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## References:

- [1] J. Vukalović et al. *Int. J. Mol. Sci.* 23 (2022) 10021  
[2] J. C. Nickel, et al *J. Phys. E :Sci. Instrum.* 22 (1989) 730