

# Author's Accepted Manuscript

Imaging and analysis of thin structures using positron emission tomography: thin phantoms and *in vivo* tobacco leaves study

Denisa Partelová, Miroslav Horník, Juraj Lesný, Pavol Rajec, Peter Kováč, Stanislav Hostin



PII: S0969-8043(16)30193-2  
DOI: <http://dx.doi.org/10.1016/j.apradiso.2016.05.020>  
Reference: ARI7495

To appear in: *Applied Radiation and Isotopes*

Received date: 18 February 2016  
Revised date: 27 April 2016  
Accepted date: 17 May 2016

Cite this article as: Denisa Partelová, Miroslav Horník, Juraj Lesný, Pavol Rajec, Peter Kováč and Stanislav Hostin, Imaging and analysis of thin structures using positron emission tomography: thin phantoms and *in vivo* tobacco leaves study *Applied Radiation and Isotopes* <http://dx.doi.org/10.1016/j.apradiso.2016.05.020>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting galley proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

**Imaging and analysis of thin structures using positron emission tomography: thin phantoms and *in vivo* tobacco leaves study**

Denisa Partelová<sup>a1</sup>, Miroslav Horník<sup>a,\*</sup>, Juraj Lesný<sup>a,1</sup>, Pavol Rajec<sup>b2</sup>, Peter Kováč<sup>b,2</sup>, Stanislav Hostin<sup>a3</sup>

<sup>a</sup>Department of Ecochemistry and Radioecology, Faculty of Natural Sciences, University of Ss. Cyril and Methodius in Trnava, Nám. J. Herdu 2, SK-917 01 Trnava, Slovak Republic

<sup>b</sup>BIONT Inc., Karloveská 63, SK-842 29 Bratislava, Slovak Republic

d.partelova@gmail.com

hornik@ucm.sk

lesny@ucm.sk

rajec@biont.sk

kovac@biont.sk

hostin@ucm.sk

\*Correspondence to: Miroslav Horník, Department of Ecochemistry and Radioecology, Faculty of Natural Sciences, University of Ss. Cyril and Methodius in Trnava, Nám. J. Herdu 2, SK-917 01 Trnava, Slovak Republic. *Tel.* +421 33 55 65 392; *Fax:* +421 33 55 65 303

**Abstract**

In this work, a novel approach utilizing the designed phantoms imitating the plant tissues was applied for the evaluation of the relationships between the parameters of the prepared phantoms and/or quantitative variables obtained within the PET analysis. The microPET system developed for animal objects and approaches used made it possible to obtain the quantitative data in the form of <sup>18</sup>F radioactivity as well as the glucose (in µg) accumulated in leaf tissues within the dynamic *in vivo* study.

**Keywords: PET; 2-[<sup>18</sup>F]FDG; leaf; uptake; solute transport; dynamic; 2D/3D imaging; phantom; principal component analysis**

**INTRODUCTION**

---

<sup>1</sup> Tel. +421 33 55 65 392; Fax: +421 33 55 65 303

<sup>2</sup> Tel. +421 02 20 670 749; Fax: +421 02 20 670 748

<sup>3</sup> Tel. +421 33 55 65 334; Fax: +421 33 55 65 303

Download English Version:

<https://daneshyari.com/en/article/8209005>

Download Persian Version:

<https://daneshyari.com/article/8209005>

[Daneshyari.com](https://daneshyari.com)