



# **TRITIUM SESSIONS AT THE 2012 ANS MEETING**

James T (Tom) Voss

April 24, 2013

Presented at the 2013 U. S. DOE  
Tritium Focus Group Meeting

## **TRITIUM IN FISSION AND FUSION**

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*Session Organizer and Chair: Tom Voss (Cybermesa)*

Discussion of Tritium Safety in Fusion Reactors, Satoshi Fukada (*Kyushu Univ*)

Commercial Light Water Production of Tritium: Update and Path Forward, Cheryl K. Thornhill (*PNNL*)

Neutronics Experiments for the European ITER Test Blanket Modules, A. Klix – Presenter (*KIT*), P. Batistoni (*ENEA C.R. Frascati*), D. Gehre (*Technical University of Dresden*), W. Pohorecky (*AGH-University of Science and Technology Cracow*)



The Standardization of Tritiated Water at NPL by  
Internal Gas Proportional Counting, Hilary Phillips -  
Presenter, Lena Johansson (*UK National Physical  
Laboratory*)

Tritium Fuel Cycle for Direct-Drive Inertial Fusion  
Reactors Using Microfluidics, W. T. Shmayda -  
Presenter, D. R. Harding, T. B. Jones (*Univ of Rochester*)

Dependence of Tritium Release from Stainless Steel on  
Temperature and Water Vapor, W. T. Shmayda -  
Presenter, M. Sharpe, A. M. Boyce, R. Shea, B. Petroski  
(*Univ of Rochester*)



Tritium Management in Fluoride-Salt-Cooled High-Temperature Reactors (FHRs), Nathan Andrews - Presenter, Charles Forsberg (*MIT*)

Retrospective Dose Estimate of Metallic Tritium Compounds, Robert Morris - Presenter, Melton Chew, Samuel Chu, Leo Faust, Billy Smith, Eugene Potter (*M. H. Chew & Associates, Inc.*)



*The presentations were in two sessions, attendance was ~ 30 at each session.*

*Here are the opening slides for some of the presentations.*

# Discussion of Tritium Safety in Fusion Reactor Systems

Keywords: tritium enclosure, recovery, permeation,  
fusion reactors

Dr. Satoshi Fukada

Dept. of Advanced Energy Engineering Science,  
Kyushu University, Japan, Professor



National Physical Laboratory

# The standardization of tritiated water at NPL by internal gas proportional counting

Hilary Phillips and Lena Johansson

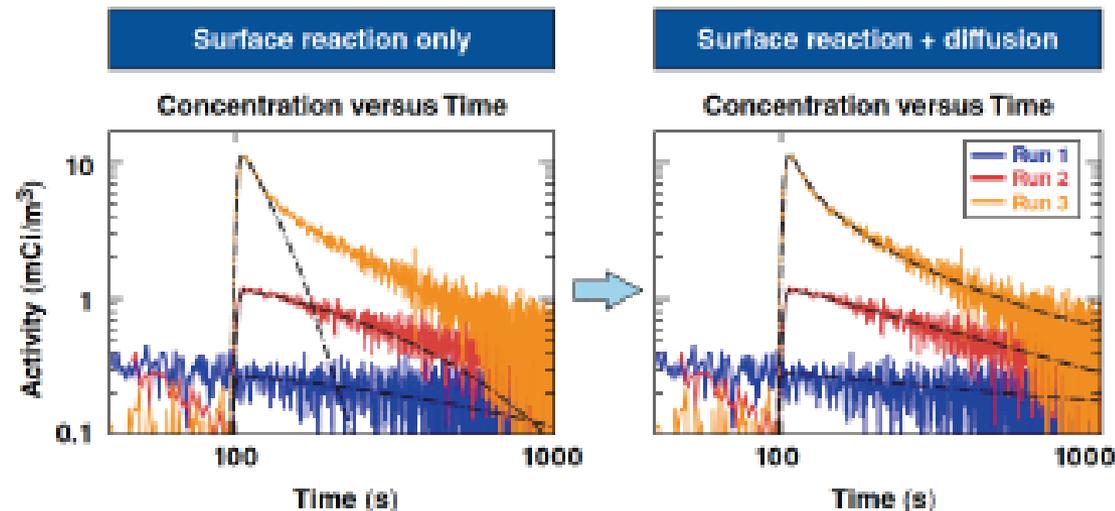
ANS Winter Meeting 2012  
San Diego

15 November 2012

National  
Measurement  
System



# Dependence of Tritium Release from Stainless Steel and Copper on Temperature and Water Vapor



**W.T. Shmayda, M. Sharpe, A.M. Boyce,  
R. Shea, B. Petroski  
University of Rochester  
Laboratory for Laser Energetics**

**American Nuclear Society  
Winter Meeting  
San Diego, CA  
11-15 November, 2012**

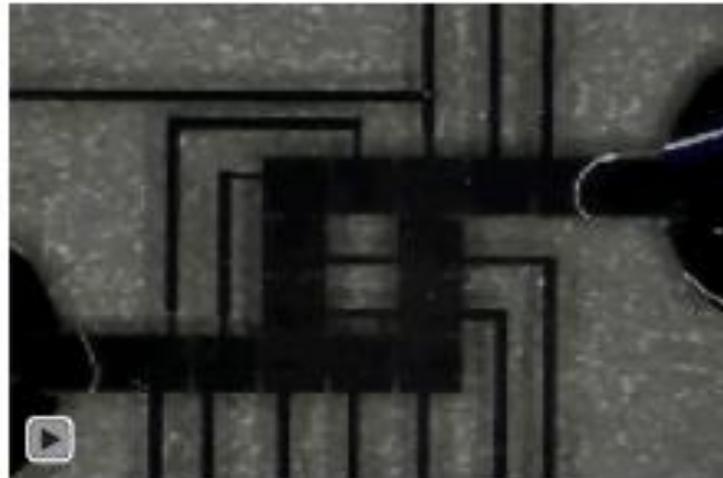
# Retrospective Dose Estimate of Metallic Tritium Compound

Robert L. Morris, Melton H. Chew, Samuel Chu, Billy Smith, Leo Faust and  
Eugene Potter

**M. H. Chew & Associates**  
Livermore, CA



# Tritium Fuel Cycle for Direct-Drive Inertial Fusion Reactors Using Microfluidics



**W. T. Shmayda and D. R. Harding**  
University of Rochester  
Laboratory for Laser Energetics

**T. B. Jones**  
University of Rochester  
Department of Electrical and  
Computing Engineering

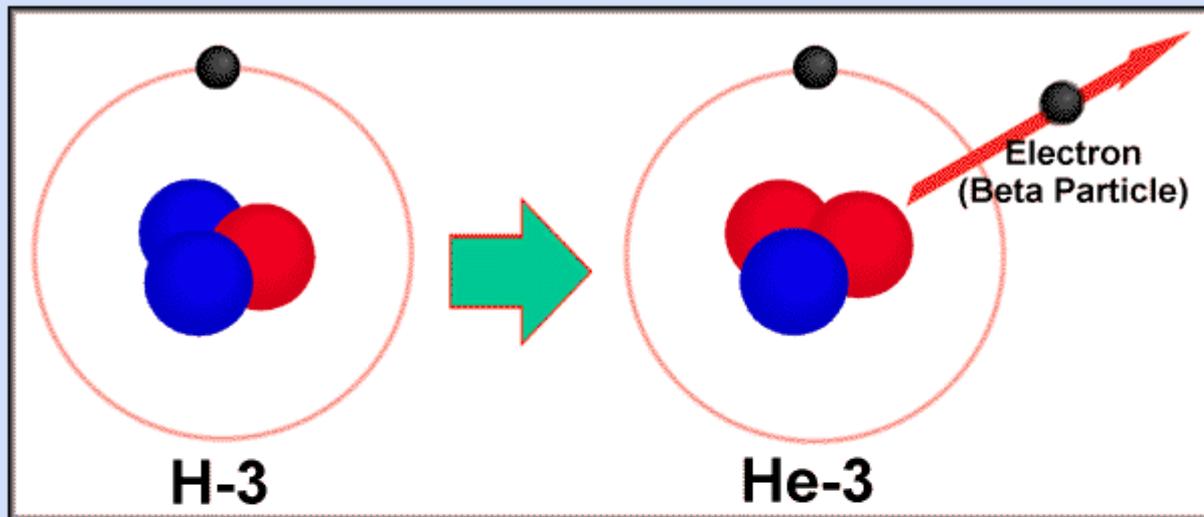
**American Nuclear Society**  
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Many more papers of interest were submitted than could be accommodated at these tritium sessions.



The Tritium Users Group has been organized to provide a forum for those and other presentations and discussions about tritium.



The Tritium Users Group is a voluntary group who have joined together to share information about and experience with tritium. The production and usage of tritium is poised to greatly expand on the national and international scene and the Tritium Users Group needs to lead the efforts.

The 2013 Tritium Users Group meeting will be held in Cincinnati, OH on September 9, 10, and 11, 2013, that is monday, tuesday, and wednesday.

The agenda for this meeting will be posted on this website.

We invite you to submit a proposal for a presentation at this 2013 meeting.

[WWW.TRITIUMUSERSGROUP.ORG](http://WWW.TRITIUMUSERSGROUP.ORG)



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