

# -Fabrication of Pd Complex-

Washing a Palladium Sample with Acetone



900° C 10H Annealing under Vacuum Condition ( $< 10^7$  Torr)



Washing the Sample with Aqua Regia (100sec)

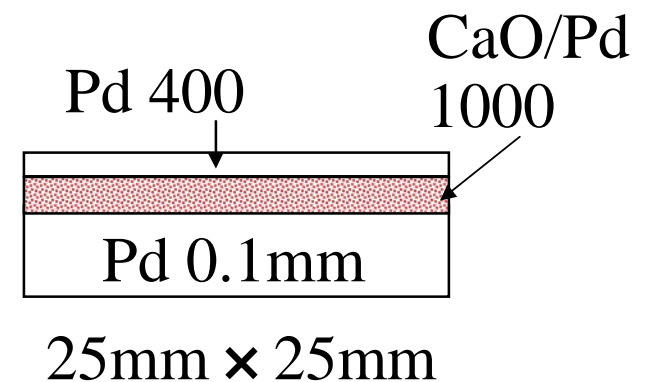
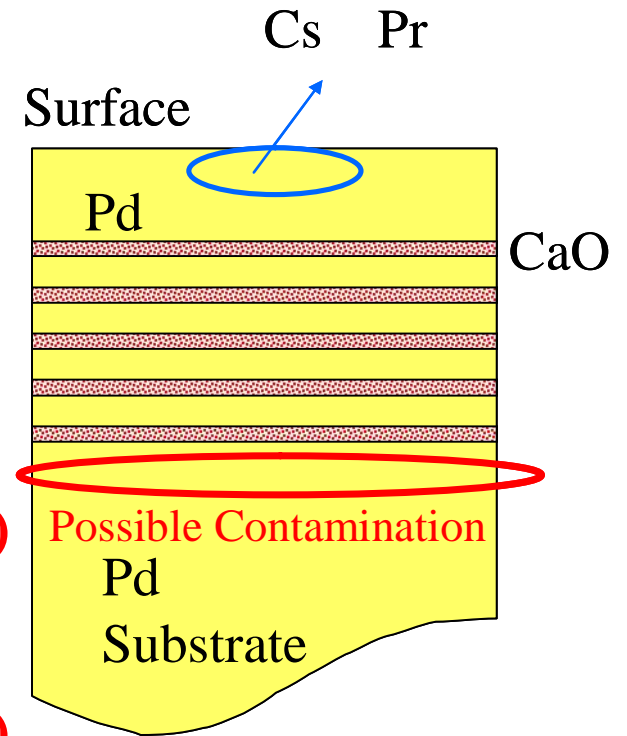


5 times Alternatingly Sputtering of CaO(20 ) and Pd(180 )



Ion Beam Sputtering of Pd only (400 )

Possible contamination



# -No Pr from Background samples-

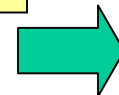
If Pr is originated from balance contamination, then **Pr should have been detected every time.**

## Chamber 1

Cs addition		D Permeation	Experiments			
F.G			sample name	MHI118	MHI131	MHI143
			Date	6/28-7/4	7/26-8/1	8/18-8/24
			Pr(Takasago)			
			Pr (Toray)	0.44ng/ml	0.20ng/ml	0.565ng/ml
			Pr (NRL)			
B.G.1		×	sample name	MHI123	MHI135	MHI147
			Date	7/5-7/12	8/2-8/8	8/25-8/31
			Pr(Takasago)	<0.01ng/ml	<0.01ng/ml	<0.01ng/ml
			Pr (Toray)	<0.005ng/ml	<0.005ng/ml	<0.005ng/ml
			Pr (NRL)	ND	ND	ND
B.G.2	×		sample name	MHI127	MHI139	MHI151
			date	7/13-7/14	8/9-8/10	9/1-9/2
			Pr(Takasago)	<0.01ng/ml	<0.01ng/ml	<0.01ng/ml
			Pr (Toray)	<0.005ng/ml	<0.005ng/ml	<0.005ng/ml
			Pr (NRL)	ND	ND	ND

Cs added but no permeation 3 samples

No Cs but permeation 3 samples



No Pr detected for 6 samples!

# -No Pr from permeated samples-

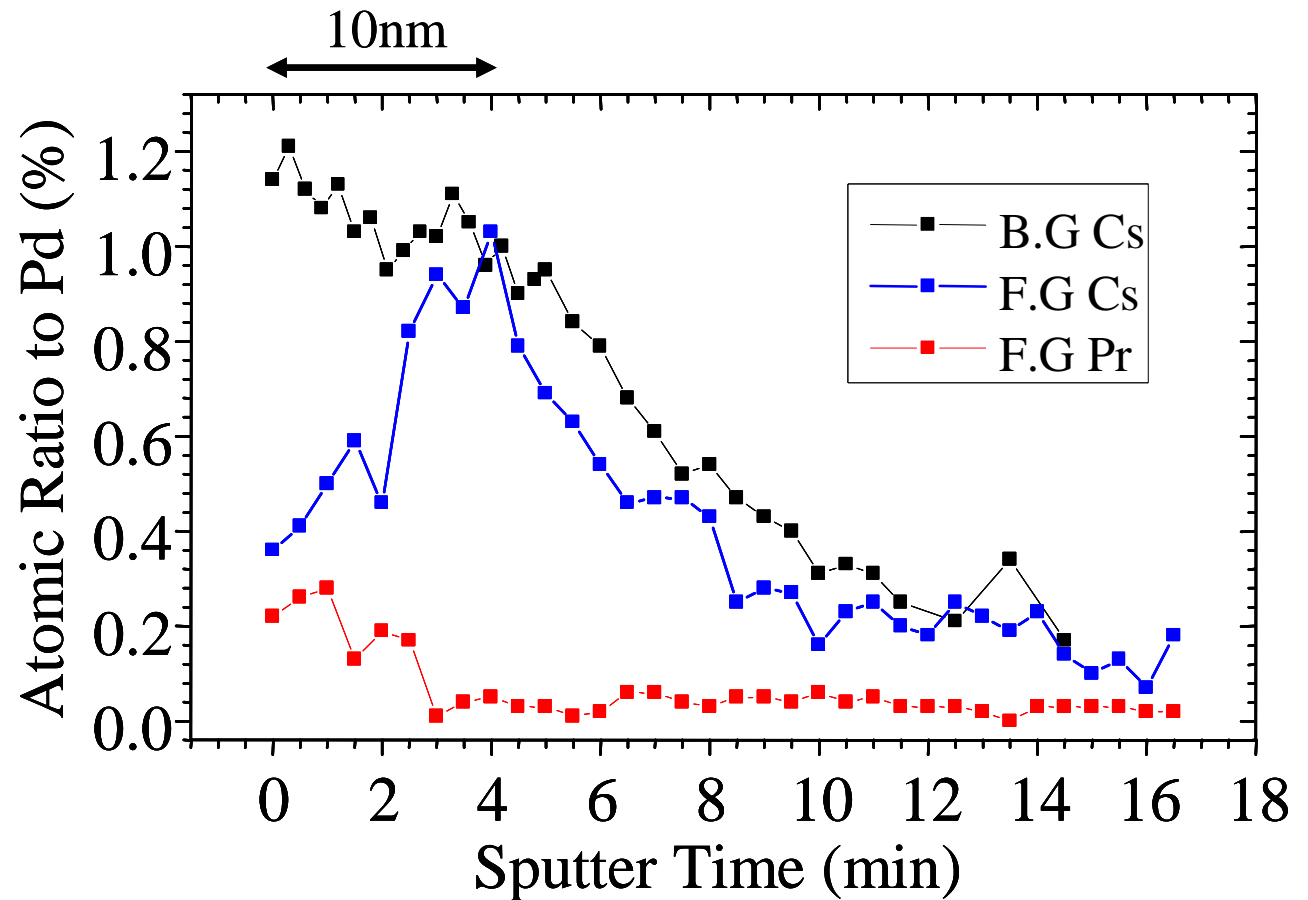
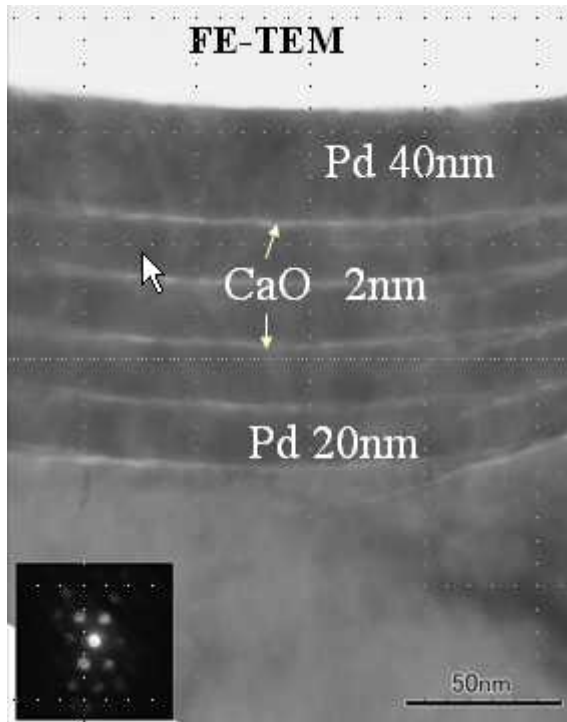
Furthermore, we could **not detect any Pr** if we use another experimental apparatus, although **sample preparation process is the same!**

## Chamber 2

Cs addition		D Permeation	Experiments					
F.G			sample name	MHI103	MHI113	MHI119	MHI124	MHI132
			Date	5/27-6/3	6/10-6/17	6/28-7/5	7/5-7/12	7/26-8/1
			Pr(Takasago)	ND	ND	ND	ND	ND
B.G.1		×	sample name	MHI101	<div> <p><b>No Pr detected for 7 samples!</b></p> </div>			
			Date	2005/5/26				
			Pr(Takasago)	ND				
B.G.2	×		sample name	MHI109				
			date	6/3-6/9				
			Pr(Takasago)	ND				

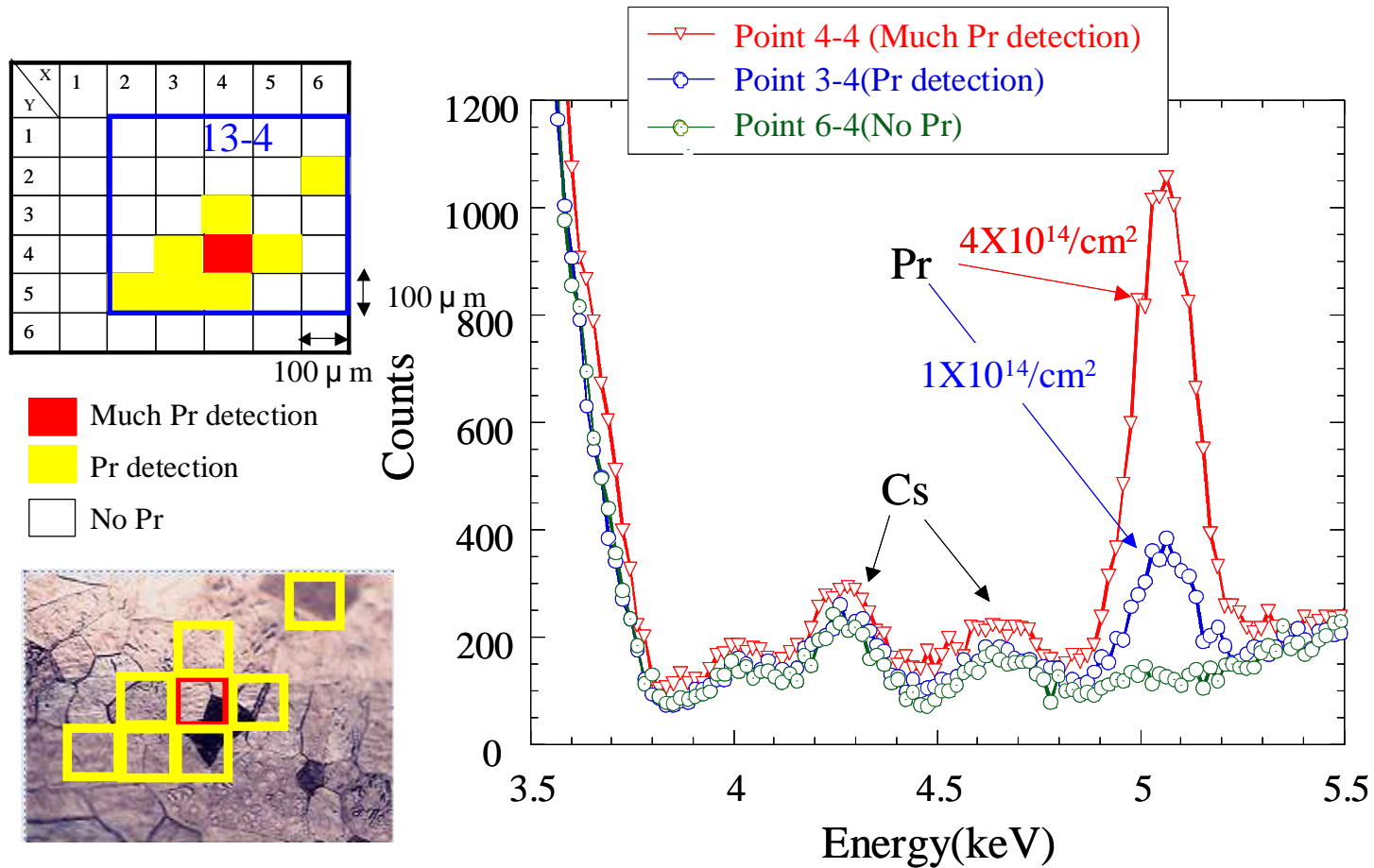
**Why we could not detect Pr even from permeated samples, if Pr is originated from balance contamination??**

# -Pr on surface-



**Why did we cannot see any Pr in deeper region than 10nm, if Pr would migrate easily by deuterium permeation?**

# -Localized Pr -



**Why this Pr did NOT migrate or diffuse, if Pr would migrate easily by deuterium permeation?**

# -No Pr from another permeated samples-

Natural Ba deposited Pd/CaO/Pd

2003/10/5

