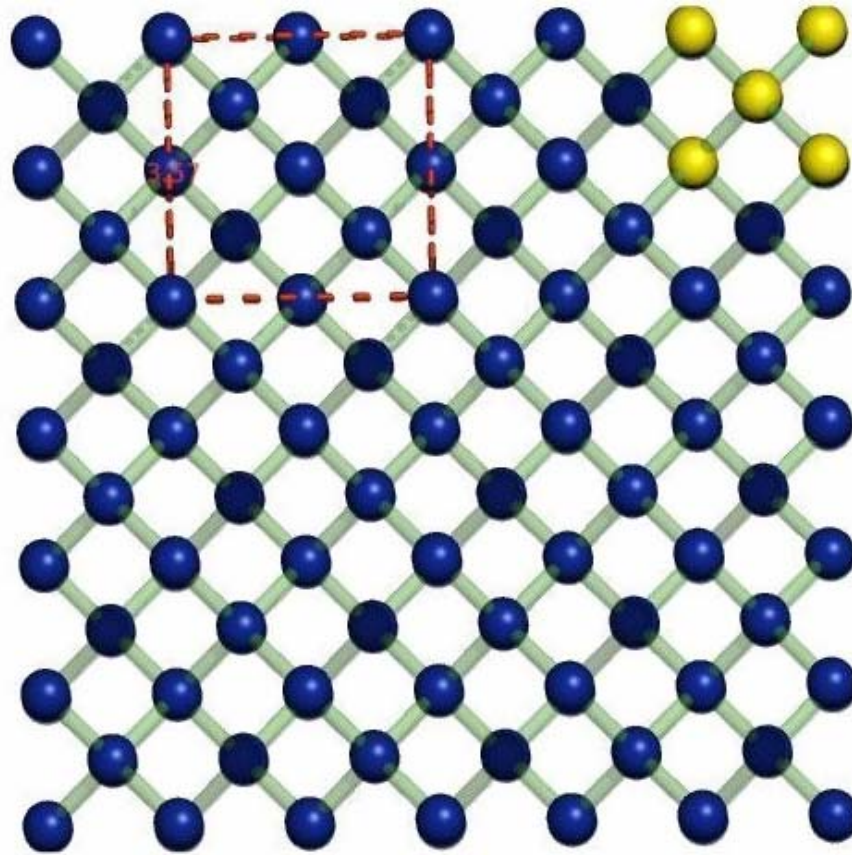


CARAT



Advanced Diamond Detectors

SUCCESSFUL MIDTERM EVALUATION in SEPTEMBER

- ✧ Dia-on-Ir growth process *significantly improved*
talks: C. Stehl, S. Rahman, EBe
- ✧ FEE: *Better understanding by simulations;*
new BB assemblies currently in preparation
talks: M. Ciobanu, P. Moritz, M. Kiš
- ◆ STRIP Metallizations: *Totally missing, behind schedule !*



THIS IS THE WAY TO LARGE-AREA DIAMOND
DETECTORS OF QUASI SINGLE_CRYSTAL QUALITY !



Activity type	RTD
Work package acronym	CARAT
Work package title	<i>Advanced Diamond Detectors</i>

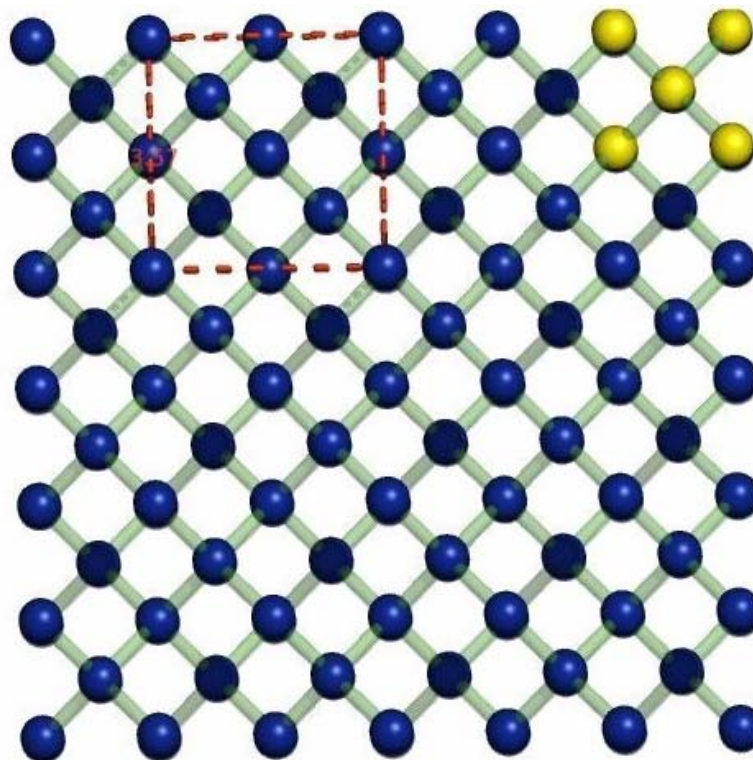
TASKS/Subtasks	2009				2010				2011				2012			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1. ENGINEERING DIA-ON-IR SAMPLES																
1.1 Preparation & struct. charact. of 1cm ² samples	█	█	█	█												
1.2 Preparation & struct. charact. of 2cm ² samples			█	█	█	█	█	█								
2. METALLIZATION																
2.1 Pad motifs on 1x1cm ² samples	█	█	█	█												
2.2 Strip-metallization of 2x2cm ² with existing masks	█	█	█	█	█	█	█	█								
3. DIA-ON-IR DETECTOR PROPERTIES																
3.1 IV characteristics, TCT measurements, CCE	█	█	█	█	█	█	█	█								
3.3 1cm ² pad detectors: energy- and time resolution	█	█	█	█	█	█	█	█	█	█						
3.4 Strip detectors 2cm x 2cm: spatial homogeneity							█	█	█	█	█	█				
Milestones																
1	1cm x 1cm test samples ready				5				Detector characterization in laboratory completed							
2	2cm x 2cm test samples ready				6				Spectroscopy- and timing properties evaluated							
3	Pad motifs realized				7				Spatial homogeneity characterized							
4	Strip metallization completed															

Study of Strongly Interacting Matter

HadronPhysics



ADAMAS



Advanced Diamond Assemblies



THE OBJECTIVES

1. Engineering of Dia-on-Ir plates for sensor applications
 - further reduction of the dislocation density; area enlargement
2. Development of new pad assemblies with DLNBA
 - analytical description, simulations, and test of electronic and sensor design parameters
3. Development of microstrip assemblies with PADI-4
 - double-sided strip motifs for differential readout
 - CBM ToF DAQ; Probing GET4 (25ps) and other TDC (10ps ?)



THE DELIVERABLES

1. 3x3cm² Dia-on-Ir films of low dislocation density
2. Prototype assemblies with new single-channel DLNBA
3. Prototype assemblies with PADI-4 and CBM ToF DAQ