

**1540 Session 4**  
**1700 Explosive Storage Safety Design and Underground Facilities**

Effects of Covered Earth Thickness and Charge Mass-to-Structural Volume Ratio of ECM on the Blast Pressure due to Internal Explosion - *Mona WATANABE*

Effect of Blast and Gas Pressure on Debris Launching Velocity under Internal Detonation - *FAN Sau Cheong*

Results of Bench Testing of a New Automatic System for Protecting People and Underground Facilities from Internal Explosions - *Nikoloz CHIKHRADZE*

Optimizing the Feasibility of Gas Storage Caverns Underground - *Bojan ŽLENDER*

**1900 Conference Dinner**  
**2200** Cinnamon Room,  
Novotel Singapore Clarke Quay

**Wednesday 12 May 2010**

**0900 Keynote Address 4**  
An Overview of the Current Research Programmes in Protective Technology Research Centre at NTU  
- *Prof PAN Tso-Chien*

**0930 Session 5 Part 1**  
**Behaviors of Materials and Structures under Impact/Blast/Shock Loads**

Large Deformation Behavior of Reinforced Concrete Columns Subjected Blast-induced Axial and Transverse Loads  
- *Prof Ted KRAUTHAMMER*

Damage of Reinforced Concrete Columns under Blasting - *Kazunori FUJIKAKE*

**1010 Tea Break**

**1040 Session 5 Part 2**  
**Behaviors of Materials and Structures under Impact/Blast/Shock Loads**

Impact Resistant Performance of Fiber Sheet Reinforced Concrete Plates Subjected to High-velocity Impact - *Masuhiko BEPPU*

Evaluation of Exposed and Hardened Concrete Columns under Blast Loading  
- *Christoph ROLLER*

Response of Glazing Systems Subjected to Airblast - *Eunice OOI*

**1150 Lunch**

**1250 Session 5 Part 3**  
**Behaviors of Materials and Structures under Impact/Blast/Shock Loads**

Quasi-static Axial Compression of Thin-walled Tubes with Different Cross-sectional Shapes - *FAN Zhihua*

Small-scale Urban Blast Model Tests  
- *LUI Ho Man*

Blast Tolerance of Power Generator  
- *CHEN Zhen Hao*

**1400 Tea Break**

**1430 Session 5 Part 4**  
**Behaviors of Materials and Structures under Impact/Blast/Shock Loads**

UHPFRC Blast Resilience Research  
- *Mark REBENTROST*

Internal Explosive Loading of Short Sandwich Tubes - *SHEN Jianhu*

Explosive Testing, Numerical and Analytical Modeling of a Modular Blast Wall System  
- *WANG Fang*

Blast Protection and Ground Shock Mitigation using Geosynthetics  
- *CHEW Soon Hoe*

**1600 Conference Closing**  
**1625** Prof TAN Kang Hai  
Deputy Director,  
Protective Technology Research Centre  
School of Civil and Environmental Engineering  
Nanyang Technological University  
Co-Chairman of Local Organising Committee

**DAPS**  
2010

**D**esign and  
**A**nalysis of  
**P**rotective  
**S**tructures

**The Third  
International Conference**

**10 - 12 May 2010**  
**Singapore**

Jointly Organised by:

# CONFERENCE PROGRAMME

## Sunday 9 May 2010

### 1800 Welcome Reception for Authors and Presenters

Pre-Registration  
Poolside, Novotel Singapore Clarke Quay

## Monday 10 May 2010

### 0800 Registration

### 0900 Welcome Address

Mr CHUA Hian Koon  
Assistant Director (Protective Infrastructure)  
Defence Science and Technology Agency  
Co-Chairman of Local Organising Committee

### 0910 Opening Keynote Address

Guest of Honour: Mr QUEK Tong Boon  
Chief Defence Scientist  
Ministry of Defence, Singapore

### 0940 Tea Break and Viewing of Posters

### 1015 Keynote Address 1

Comprehensive Blast Damage and Building Assessment - *Prof Ted KRAUTHAMMER*

### 1045 Session 1 Protection Concepts and Design

More Material for Better Protection  
- *Bengt VRETLAD*

Interaction of Blast Waves with Flexible Structures - *Martien TEICH*

Small-scale Fireball Tests - *NG Chor Boon*

Is Protection a Binary Problem?  
- *Rolf DALENIUS*

Development and Experimental Verification of Hydrocode Afterburning Model for Aluminized and Non-Aluminized Explosives  
- *CHEW Choon Seng*

### 1230 Lunch

### 1330 Session 2 Part 1 Man-made Hazards and Progressive Collapse Analysis

Structural Robustness in Progressive Collapse Mitigation - *Shalva MARJANISHVILI*

Characterizing a Reinforced Concrete Connection for Progressive Collapse Assessment - *TAN Loo Yong*

Progressive Collapse Resistance of RC Beam-Column Sub-assemblages - *YU Jun*

Numerical Simulation of Progressive Collapse Behavior of Tall Core-Outrigger Structures Subject to Blast Structures Subject to Severe Earthquakes - *SUN Feifei*

### 1500 Tea Break

### 1530 Session 2 Part 2 1700 Man-made Hazards and Progressive Collapse Analysis

Performance Based Analysis and Design Approach for Mitigating the Risks of Building Collapse - *LAN Sheng Rui*

Tensile Membrane Action of RC Slabs in Preventing Progressive Collapse of Building Structures - *PHAM Xuan Dat*

Some Quantitative Aspects of World Trade Center Collapse - *Gregory SZULADZINSKI*

Catenary Action of Restrained Steel Beam Against Progressive Collapse of Steel Frameworks - *LIU Yu Shu*

## Tuesday 11 May 2010

### 0900 Keynote Address 2

Aluminium as a Structural Material used in Light-Weight Protection: Behavior, Modeling and Validation  
- *Prof Magnus LANGSETH*

### 0930 Session 3 Part 1 Analysis of the Behaviors of Structures under Impact/Explosive Loading

Dynamic Structural Behavior of Bridge Components under Explosive Effects  
- *Alexander STOLZ*

Validation of Fluid Structure Interaction Models of Reinforced Concrete Structures Subjected to Internal Explosion  
- *HUNG Cheng-Wei*

### 1010 Tea Break

### 1040 Session 3 Part 2 Analysis of the Behaviors of Structures under Impact/Explosive Loading

An Analytical Simulation on the Impact Behavior of Flexible Rock-fall Fence using the Improved SPH Method  
- *Yoshimi SONODA*

Modeling of Multiphase, Multi-material Blast/Structure Interactions  
- *Joseph D. BAUM*

Numerical Modeling and Explosive Testing of Concrete Structural Elements under Blast Loading - *Mark WAN*

Effect of Erosion Value of Strain on Crater Size of Reinforced Concrete Plates Subjected to Shaped Charge  
- *CHUNG Chao-Ni*

### 1210 Lunch

### 1310 Session 3 Part 3 Analysis of the Behaviors of Structure under Impact/Explosive Loading

Model for Penetration of Shaped Charge Warheads in Protective Coverings  
- *Carl ELFVING*

Numerical Simulation of Response of Reinforced Concrete Members under Falling-weight Impacts - *Ian M MAY*

Short Reinforced Concrete Columns under Combined Blast-induced Axial and Transverse Loads - *Prof Ted KRAUTHAMMER*

High-strength Aluminium Plates Struck by Ogival-nose Projectiles - *Tore BØRVIK*

### 1440 Keynote Address 3

Alternate Load Paths in Mitigating Progressive Collapse of RC Building Structures subjected to Column Loss Scenarios  
- *Prof TAN Kang Hai*

### 1510 Tea Break