

RAPDASA Management Committee

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Wednesday, 1 November 2006

Workshop Venue – Cape Peninsula University of Technology, IT Center (08h30 – 15h00)

Morning Tea/Coffee	08h30 – 09h00
Workshop Registration	08h30 – 09h00
Conference Registration	09h00 – 15h00
3 Parallel Workshops	09h00 – 12h30

1. Advanced Tooling for SMME's
2. Design and Rapid Manufacturing
3. Rapid Prototyping in the Medical Industry

Lunch	12h30 – 13h30
Tour of CPUT Bellville Campus	13h45 – 14h30
Departure from CPUT to Conference Venue	15h00

Conference Venue – Club Mykonos (17h00 – 23h00)

Arrival at Conference Venue	17h00
Accommodation Check-In	17h30 – 18h30
Welcome	18h30 – 18h40
Boat Cruise	18h50 – 19h45
Dinner	20h00 – 23h00

Thursday, 2 November 2006

**Session 1 – Opening Ceremony and Keynote Speeches
(08h00 – 09h50)**

Venue: Athene 1

Chair of Opening Ceremony:

Prof D Dimitriov

Official Welcome

08h00 – 08h10

Prof. V Tanga, Vice-Chancellor of the Cape Peninsula University of Technology

1. Keynote Lecture

08h10 – 09h10

Global Trends in Additive Fabrication, Mr. T Wohlers

2. Keynote Lecture

09h10 – 09h45

Western Cape Provincial Government's strategies around innovation in the local Tooling Industry, Mr. K Khan, Department of Economic Development and Tourism, PGWC

Morning Tea/Coffee

09h45 – 10h05

Session 2 – General Assembly (10h05 – 11h25)

Rapid Prototyping and Rapid Manufacturing

Chair of General Assembly – Session 2:

Dr O Franks

	Time	Presenter-Title of Presentation	Venue
3	10h05 – 10h25	The Western Cape Tooling Initiative H Snyman	Athene 1
4	10h25 – 10h45	15 Years of Prototyping in South Africa B Bond	
5	10h45 – 11h05	Constantly changing design realized through Rapid Manufacturing L J Barnard & D J de Beer	
6	11h05 – 11h25	Production of overhanging structures in stainless steel with Selective Laser Melting M van Elsen, P Corbeels, H Vandezande & J –P Kruth	

Break– 11h25-11h45

Session 3 – Rapid Prototyping and Rapid Manufacturing (11h45-13h25)

2 Parallel Sessions occurring in Athene 1-2 & 3

Chair of Session 3a:

Mr K Jacobs

	Time	Presenter-Title of Presentation	Venue
7	11h45 – 12h05	Rapid Die Manufacturing M F V T Pereira, M Williams & R Bruwer	Athene 1
8	12h05 – 12h25	ACTech's use of Rapid Prototyping Technologies to improve their product development strategies I Boettger	
9	12h25 – 12h45	Practical experiences using rapid prototyping and product development R T Buhrmann	
10	12h45 – 13h05	Investigating a method to digitize the internal geometry of 3D objects A Bögel, S Queisser & K Schreve	
11	13h05 – 13h25	Evaluation of using 3D printing techniques for the production of products with small features A Ghany, K & A Mughny, A	

Session 3b – Product Development and Process Control

Chair of Session 3b:

Mr. A Makoko

	Time	Presenter-Title of Presentation	Venue
12	11h45 – 12h05	Flexible Manufacturing Concepts / New Bussiness Models Like Mass Customisation – Advantages and New Possibilities by Using Laser Sintering Technologies P Rosker	Athene 2
13	12h05 – 12h25	Advanced Solutions for SMME Competitiveness Improvements in the South African Tooling Industry A E Sonn & D Dimitrov	
14	12h25 – 12h45	The issue of Quality in Mass Production P Maclauren	
15	12h45 – 13h05	A review of new product developments in Rapid Prototyping technologies and their applications to metal casting D K Nyembwe, D de Beer & L Masu	
16	13h05 – 13h25	3D Printing and conventional Foundry Processes for quick turnaround parts B Bullock & P Bullock	

Lunch – 13h25-14h25

Session 4 – Student Presentations (14h25 – 16h25)

Student presentations occur in three venues and run parallel to each other

Session 4a – Athene 1-2

Session 4b – Athene 3

Session 4c – Athene 4

Chair of Session 4a:

Mr E Erfort

Student Presentation Assessment Panel

D de Beer, R Ziegler, T Wohlers, E Erfort

	Time	Presenter-Title of Pres	Venue
17	14h25 – 14h45	Rapid Tooling for Carbon Fibre Compression Tools C M Potgieter & L J Barnard	Athene 1
18	14h45 – 15h05	Development of a metal shape deposition rapid prototyping machine for production of mono and multi-metallic form-fit-function products N Mbonde & G J Oliver	
19	15h05 – 15h25	Characteristics of SLS for single-component metal powder bed Z Huan	
20	15h25 – 15h45	The use of Finite Element Methods in determining Tooling Failures M Mabogo & G J Oliver	
21	15h45 – 16h05	Conceptualization, Design, Prototyping and Testing on Healing of SMA Embedded HPC Materials W M Mwita, S Nqabisa & O Philander	
22	16h05 – 16h25	A study on the mechanical properties of fibre embedded – epoxy resin matrices M J van Heerden, P Dlisane & O Philander	

Session 4b – Student Presentations

Chair of Session 4b:

Prof W B du Preez

Student Presentation Assessment Panel

M Riddles, P du Plessis, B Bond, W B du Preez

	Time	Presenter-Title of Pres	Venue
23	14h25 – 14h45	Managing new product development in small and medium enterprises C M Mollejane	Athene 2
24	14h45 – 15h05	Managing product innovation within the South African SME's R W Maladzi & K Jacobs	
25	15h05 – 15h25	Intelligent materials in Engineering Structures for Health Monitoring S Nqabisa & O Philander	
26	15h25 – 15h45	Development of Aero-Morphing composite material based on NiTi SMA's P Dlisane & O Philander	
27	15h45 – 16h05	Conceptualisation, design, prototyping and testing of self-healing compact test specimens using hybrid polymeric composite materials E Grantham, S Nqabisa & O Philander	
28	16h05 – 16h25	Design, Manufacture and Testing of a NiTi SMA Helical coil spring Y Adanu & O Philander	

Session 4c – Student Presentations

Chair of Session 4c:

Mr L J Barnard

Student Presentation Assessment Panel

K Jacobs, I Campbell, M Truscott, L J Barnard

	Time	Presenter-Title of Pres	Venue
29	14h25 – 14h45	Production of Nano-sized (V, W)C powder by mechanical alloying S Bolokang	Athene 3
30	14h45 – 15h05	Manufacture and test performance of active smart composite polymeric materials embedded with shape memory alloy wires S Ntola, S Nqabisa & O Philander	
31	15h05 – 15h25	Effect of thermo-mechanical cycling on actuation temperature exhibited by NiTi SMA S P Ndabula, M D Mukhawana, O Philander	
32	15h25 – 15h45	Effect of Re number on the flow field around geometrical shapes G Kesheni, M Petersen, O Philander	
33	15h45 – 16h05	The effect of Temperature variations on the stiffness of a polyurethane channel beam embedded with NiTi wires C M Magoda & O Philander	
34	16h05 – 16h25	A study on the pullout strengths of smart composites embedded with NiTi Shape Memory Alloys L Matshoba & O Philander	

Late Afternoon Tea – 16h25-16h45

Session 5 – Rapid Prototyping and Rapid Manufacturing in the Medical Industry (16h45-18h05)

Chair of Session 5:

Dr I Campbell

	Time	Presenter-Title of Pres	Venue
35	16h45 – 17h05	Applying RM and RT to fast-track development of neck-braces L J Barnard, G J Booyesen, C M Potgieter & D J de Beer	Athene 1
36	17h05 – 17h25	Product development lessons from the Eyeborn experience W B du Preez, P W Richter & D Hope	
37	17h25 – 17h45	Transfer and Diffusion of new technologies to the medical Industry M Truscott, D de Beer, L Barnard & G Booyesen	
38	17h45 – 18h05	Development Methodology and Test Protocols for an Artificial Intervertebral Disc Prosthesis D Dimitrov & N de Beer	

RAPDASA AGM – 18h05-19h05

**RAPDASA06 Conference Gala Dinner
20h00-Late**

Friday, 3 November 2006

Session 6 – Keynote Speeches (08h00 – 09h30)

Venue: Athene 1

Chair of Session 6:

Prof. D de Beer

39. Keynote Lecture

08h00 – 08h45

The National AMTS initiatives and technology focus areas and the manner in which they impact on Rapid Prototyping, Rapid Manufacturing and Product Development for Automotive and Aerospace Industries.

Dr. K Parker, Advanced Manufacturing Technology Strategy (AMTS), Department of Science and Technology, South Africa

40. Keynote Lecture

08h35 – 09h25

Design Considerations for Rapid Tooling

Dr R I Campbell, Senior Lecturer, Department of Design and Technology, Loughborough University, Loughborough, United Kingdom

Morning Tea/Coffee

09h25 – 09h45

Session 7 – Tooling Technologies (09h50 – 11h10)

Chair of Session 7:

Mr. B Bond

	Time	Presenter-Title of Presentation	Venue
41	09h50 – 10h10	Blow moulding process performance improvement using conformal cooling in the mould design D Dimitrov & A Bester	Athene 1
42	10h10 – 10h30	The performance of Tooling for the drilling of Titanium Alloy – Ti – 6AL4V and Graphite/Bimaleimide – Titanium Alloy Stacks G J Oliver & W P Mitchell	
43	10h30 – 10h50	New machining techniques for rapid manufacturing C Martell	
44	10h50 – 11h10	Applications and Opportunities for Flexible Model Materials R Coldham	

Break– 11h10-11h30

Session 8 – Tooling Technologies (11h30-13h10)

Chair of Session 8:

Ms. P Bullock

	Time	Presenter-Title of Presentation	Venue
45	11h30 – 11h50	Computer aided reconfigurable fixture design J S Maphaka	Athene 1
46	11h50 – 12h10	Wire Cutting of Spur Gears W P Mitchell	
47	12h10 – 12h30	High performance Tooling – Getting the combination right J Ferreira	
48	12h30 – 12h50	Occupant Safety System Component Quality W Kohlhofer	
49	12h50 – 13h10	Prediction of Temperature profiles induced during laser welding D A Desai	

Lunch – 13h15-14h15

Closure – 14h15-14h30

**Departure from Conference Venue to Cape Town
15h00**