



RAPID PRODUCT DEVELOPMENT ASSOCIATION OF SOUTH AFRICA

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2023 CHAIRMAN'S REPORT

November 1st, 2023

**RAPDASA
Annual General Meeting**

**CSIR, INTERNATIONAL CONVENTION CENTRE
PRETORIA**

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1. Introduction

The Rapid Product Development Association of South Africa (RAPDASA) was formally founded at the First Annual General Meeting of the Association on 8 November 2000, at the CSIR International Conference Centre in Pretoria. This year marks the 23rd annual RAPDASA conference. It has been an exciting year for RAPDASA with many changes and new endeavours.

The RAPDASA conference has grown substantially over the last number of years and have partnered with RobMech (the Robotics and Mechatronics conference) and PRASA (the Pattern Recognition Association of South Africa). RAPDASA this year also partnered with the Advanced Materials Initiative (AMI).

The latest conference (called the RAPDASA-RobMech-PRASA-AMI 2023 Conference) was held at the CSIR International Conference and hosted by the Council for Scientific and Industrial Research (CSIR) and Central University of Technology (CUT). The theme for the conference was *“Advanced Manufacturing Beyond Borders”*.

This report will highlight some of the activities of the RAPDASA organisation for the year, it will provide feedback on the 2023 conference and conclude with some updates from AM service providers in South Africa.

2. RAPDASA Management Committee

The RAPDASA management committee for 2023 was elected during the Annual General Meeting held on 3rd November 2022 at the Lord Charles Hotel, Somerset West, South Africa. Several members were also co-opted during the year to support the management committee. Members of the management committee were as follows:

- Ntombizodwa Mathe (Chairperson)
- André van der Merwe (Vice Chairperson)
- Francois du Rand (Treasurer)
- Thuli Mkhalihi (Marketing and Website)
- Lerato Tshabalala (Industry Workshops)
- Deon de Beer (Sponsorships)
- Imdaadulah Adam (Design Competition)
- Willie du Preez (Conference Editor)
- Jaco van de Walt (Additional)
- Rynette Coetzer (Administration)
- Riaan Stopforth (Liaison - RobMech, PRASA)
- Miemie Maminza (Liaison – CoSAAMI)
- Jakkie Postma (Liaison – CoSAAMI)

RAPDASA management committee meetings were held on:

- 25 November 2022
- 27 January 2023
- 26 May 2023
- 25 August 2023
- 26 October 2023

Executive committee meetings were held on:

- 03 March 2023
- 31 March 2023
- 5 May 2023
- 30 June 2023

- 28 July 2023
- 29 September 2023

3. 2023 Annual Conference

The RAPDASA conference has grown substantially over the last number of years, and we have partnered with RobMech (the Robotics and Mechatronics conference), Advanced Materials Initiative (AMI), and PRASA (the Pattern Recognition Association of South Africa).

The 2023 conference was hosted by the CSIR and CUT at the CSIR International Convention Centre, Pretoria, South Africa.

The conference had a total of 246 (both full conference, 1 day attendance, and industry day). The first full in-person conference since pre COVID-19.

The main conference boasted a total of presentations (of which 15 was keynote presentations), while an additional 8 presentations were presented in the industry track.

The pre-conference seminar on “design and additive manufacturing of titanium and platinum group metal parts”, had 5 technical presentations, and 2 keynote addresses, while 8 presentations were delivered at the seminar on “computational and data-driven modelling”.

108 full papers were accepted for publication after a double-blind peer review process, of which 7 papers are to be published in the SA Journal of Industrial Engineering, and 101 papers in the conference proceedings in. A further 17 extended abstracts were accepted for presentation in the conference without full papers. A poster session with 2 poster was also included.

I would like to thank all our sponsors and exhibitors for their continued support of the RAPDASA-RobMech-PRASA-AMI conference. All of this would not be

possible without them. May we continue to grow and be inclusive in bringing Advanced Manufacturing Beyond the Border of South Africa, with participation for our international guests in and out of Africa. The sponsors for this year's conference are:

Platinum:

- Council for Scientific and Industrial Research
- Central University of Technology Centre for Rapid Prototyping and Manufacturing.
- Department of Science and Innovation (through the Collaborative Program on Additive Manufacturing program)
- Vaal University of Technology
- Advanced Materials Initiative ((through the Department of Science and Innovation)

Silver:

- South African Nuclear Energy Corporation (NECSA)
- Rapid3D and EOS Electro Optical Systems GmbH

Bronze:

- Stellenbosch Technology Centre - Laboratory for Advanced Manufacturing

Over and above our sponsors, we also had the following exhibitors:

- Aditiv Solutions
- CSIR
- Centre for Rapid Prototyping and Manufacturing (CUT)
- Product Development and Technology Station (CUT)
- SIMTEQ
- Weartech (Pty) Ltd
- TSASA
- Rapid3D and EOS Electro Optical Systems GmbH
- Vaal University of Technology (VUT)
- HH Industries
- AMI
- SIMTEQ Engineering
- Anton Paar Southern Africa Pty Ltd

Appreciation to Dr Lerato Tshabalala (CSIR) and Prof Deon Deon De Beer (CUT), the 2023 conference co-Chairs, for their hard work and dedication in

bring yet another successful conference together. The conference organizing team includes:

- Lerato Tshabalala (conference co-Chair)
- Deon De Beer (conference co-Chair)
- Rynette Coetzer
- Thuli Mkhalihi
- Heinrich van der Merwe
- Willie Du Preez
- Boitumelo Mabilo
- Rosinah Modiba
- Riaan Stopforth
- Washington Makoana
- Simphiwe Mabusela
- Daniel Kirkman
- Francois Du Rand
- Rosinah Modiba
- Puseletso Tlhareseng

Finally, a special thanks to the following people who made a tremendous contribution to the conference.

- Willie du Preez, the editor for RAPDASA-RobMech-PRASA-AMI proceedings, thank you for managing the academic side of the conference, including the paper review and publication processes. The quality of the papers submitted year and after and the consistency at which you pursue this, is appreciated. A big appreciation to the Track Directors, Reviewers and the individuals that chose to submit their papers to our proceedings. Your hard work and time do not go unnoticed.
- Rynette Coetzer for managing administration for RAPDASA as well as the annual conference. You are truly the heart of RAPDASA.

4. Marketing and Electronic Media

RAPDASA has been running an ongoing social media marketing campaign throughout the year on Facebook, Instagram, and LinkedIn. Marketing activities were driven by our own Thuli Mkhalihi and Digi-Guru.

5. Dimitrov Scholarship

The Dimitrov Scholarship supported Christine Mkhonto, Keletso Monareng, Lebogang Motsomone, Tebogo Morukaladi and Tsepo Dube to attend the RAPDASA 2023 conference. A big thank you to our contributors and sponsors towards the scholarship and for purchasing the Wohlers report to make sure that we are able to support the students with this initiative. As a non-profit organization, we are always looking for a way to give back to the community, this is one of the ways that RAPDASA contributes towards the next generation of scientists and engineers.

6. Financials

RAPDASA currently has a healthy financial status as per treasurer's report. On behalf of RAPDASA, I want to thank our Treasurer, Francois Du Rand, for his tireless contributions in this regard.

7. Highlights of the South African AM industry for 2023

Upon creation of this report, AM service providers in South Africa were given an opportunity to report on major developments in their respective organisation during 2023. This section includes a summary of the responses received.

Aditiv Solutions

Aditiv Solutions has delivered a HYRAX machine to the Central University of Technology earlier this year. This was our first machine that we delivered that can process reactive metals and it was also delivered with a custom designed "Build Reduction Unit" to aid the CUT in some of their research work on precious metals and special alloys. We are also delivering another 2 machines to the CSIR before the end of 2024. The machines will be used towards the advancement of additive manufacturing research and development at the CSIR and open up to new advance materials. We have started exports of our machines and we will deliver a HYRAX to our first international client in quarter 1 of 2024.

Aditiv Solutions have also expanded in other business areas and we have provided substantial engineering consultation services in the field of additive manufacturing in 2023. We are currently also launching an online additive manufacturing service bureau for metal and nylon parts. For more information, check out our new website (*which will launch by the end of this week*).

HH Industries

HH Industries has taken a substantial step towards sustainable manufacturing by investing in a facility located in Somerset West, Cape Town. The facility is completely independent from the electricity grid and relies entirely on solar power. This initiative not only exemplifies HH Industries' commitment to environmental responsibility but also showcases how AM technologies can be harnessed in harmony with green manufacturing practices.

HH Industries has continued to expand its footprint in Nigeria's oil & gas sector. We are proud to announce the successful delivery of the first metal AM machine to a prominent client in Nigeria's oil & gas industry. The facility will be commissioned soon and marks a significant stride in leveraging AM technologies to enhance efficiency and reduce downtime within this critical sector. Building upon our commitment to the oil & gas industry in Nigeria, HH Industries is actively working on the development of a second oil and gas facility in Nigeria, ensuring the facility is sustainable and able to run successfully from an African perspective.

Multitrade 3D Systems

Multitrade 3D Systems successfully secured orders for two metal Laser Powder Bed Fusion systems, set for commissioning in December 2023 and January 2024 in South Africa. Multitrade 3D Systems have expanded their product portfolio by incorporating state-of-the-art systems from Amazemet, a move aimed at providing robust support to our valued customers in the domains of research and academia. The first Amazemet Powder atomiser in Africa was installed and commissioned at Mintek earlier this year, marking a significant stride in empowering local research and development initiatives into new and novel powders for Additive Manufacturing. Dr

Hein Moller and his team received training from the Amazemet team and have already started making a number of powders from various materials.

8. Conclusion

Since its first conference in 2020 at the CSIR, the RAPDASA conferences has grown substantially. This is possible due to the nature and spirit of collaboration that exists within the RAPDASA community.

Last year, the network has grown to include the Advanced Materials Initiative (AMI,), bring the addition of data driven modelling to the conference. This is in addition to our current partners, RobMech, PRASA.

I would like to thank the RAPDASA Executive and Management Committees, AMI, RobMech and PRASA representatives for their support during this year.

Lastly, I would like to thank the conference organisers again for hosting another excellent event.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Ntombi Mathe', written in a cursive style.

Ntombi Mathe
(Chairperson)