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## Digital laser mode amplification using ND: YAG amplifier

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**Abstract content (Max 300 words) <a href="http://events.saip.org.za/getFile.py/target="\_blank">Formatting & Special chars</a>**

In this we work demonstrate the output power amplification of the generated higher-order modes from a digital laser by using an extra-cavity Nd: YAG amplifier. The digital laser generates fundamental higher-order modes by encoding and displaying amplitude digital hologram mask on a phase-only spatial light modulator (SLM) that acts as an end-mirror of the laser resonator cavity. The amplifier was designed in such a manner that when higher-order modes enters the Nd:YAG amplifier they will experience higher gain which would translate to increase the power of the mode when it is transmitted through the amplifier.

**Apply to be considered for a student award (Yes / No)?**

Yes

**Level for award (Hons, MSc, PhD, N/A)?**

PhD

**Main supervisor (name and email) and his / her institution**

Andrew Forbes

**Would you like to submit a short paper for the Conference Proceedings (Yes / No)?**

Yes

**Please indicate whether this abstract may be published online (Yes / No)**

Yes

**Primary author:** Mr BELL, Teboho (CSIR)

**Co-authors:** Prof. FORBES, Andrew (CSIR); Dr NGCOBO, Sandile (CSIR)

**Presenter:** Mr BELL, Teboho (CSIR)

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