

# THE LASER USER

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SPRING 2021

AILU

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100

## IN THIS ISSUE:

*PBF gas flow visualisation*

*Laser Induced Damage Threshold*

*Medical device processing*

*Texturing cutting tools*

*Ice-free textured surfaces*

*Femtosecond burst modes*

100<sup>th</sup> Edition of The Laser User

**ULTRAFAST  
LASER PROCESSING:  
RESEARCH UPDATE ON LASER  
MANUFACTURING TECHNIQUES**

## THE LASER USER

**Editor:** Dave MacLellan  
**Sub-Editor:** Catherine Rose

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The Laser User is the house magazine of the Association of Industrial Laser Users. Its primary aim is to disseminate technical information and to present the views of its members. The views and opinions expressed in this magazine belong to the authors and do not necessarily reflect those of AILU.

The Editor reserves the right to edit any submissions for space and other considerations.

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The cover image shows a braided catheter, with a PEBAX outer sheath, metal braid and PTFE inner liner. The outer sheath was removed using short pulsed laser processing. Our thanks to Blueacre Technology for machining the special message in lettering approx. 2 mm high.

Photo credit: Dave MacLellan, AILU

## AILU STEERING COMMITTEE 2021-22

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#### Elected until 2022

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 Jonathan Lawrence (Coventry University)  
 Mark Millar (Essex Laser)  
 Arina Mohammed (University of Hull)

Past presidents and founder members are also able to attend committee meetings. Anyone wishing to join the AILU Steering Committee please contact the Executive Director.

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## ASSOCIATION NEWS

## FIRST WORD

Today I am reflecting on the milestone that is our 100th issue of The Laser User. It is also 6 years since I took over from Mike Green and I have been editor of the magazine since Issue 78. My job is made so much easier by having Cath who pulls everything together and takes on so much more every year. I know that I am biased, but I do feel a sense of satisfaction when the printed magazine lands on my doormat and I can flick through it. There isn't another laser industry magazine quite like this, and yet we are open to your opinions to keep it fresh and bring in new content.

As well as 100 issues we have delivered our first virtual ILAS, if you missed it the videos are all online and can be viewed by all delegates. If you missed out on registering we are happy to offer the online content at the same price as before ILAS so that you can access the library for a very competitive price. There are almost 24 hours of video content including 83 presentations and more.

Finally we also recently had our 27th AGM (the second one online) and I was greatly encouraged by the new people who were keen to join the committee – you can see who they are on page 5. Hope to see you all physically at some point this year!

**Dave MacLellan**  
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## PRESIDENT'S MESSAGE

Fellow laser professionals,

Welcome to the 100th edition of The Laser User, AILU's quarterly magazine. That AILU has reached this milestone is testament to the high regard The Laser User is held in by the laser community. The combination of industry news, new product launches, focus stories, and light touch technical articles makes it particularly accessible to those unfamiliar with the laser industry, as well as those looking for their quarterly 'fix' of laser related knowledge.

Congratulations to all involved at AILU, past and present, for achieving this significant milestone. Of course, the 100th edition would not have been possible without the continued efforts and contributions from all of you in the laser community. A big thank you, on behalf of AILU, to all those who have contributed to The Laser User over the years.

In March, AILU held ILAS 2021. Those of you with a sharp mind will remember this was originally scheduled for 2020, to celebrate another AILU milestone (AILU's 25th anniversary), but was re-scheduled to March 2021 and held virtually for obvious reasons. With a dedicated conference platform, the feedback from attendees was that ILAS 2021 managed to re-create much of the experience of a physical ILAS, with there even being a virtual social evening for AILU members to share some of their hidden talents! ILAS 2021 success aside, I know I am not alone

when I say 'I hope the next ILAS is a physical event'.

And with that, my two year tenure has come to an end and I sign off as AILU President in April. It's fair (and probably obvious) to say it has not been the Presidency I envisaged, and has not been straightforward! However, I'm proud of the way we have navigated the turbulence of the last 15 months, and migrated AILU's activities into the virtual world. I'll still be engaged in the laser community and look forward to supporting AILU and Adam Clare, the new AILU President, when needed. There's more on the new AILU committee line-up on page 5.

Stay safe,

**Jon Blackburn**  
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## RIC'S RAMBLINGS

I guess it will come as no surprise to you that I want to talk about our recent ILAS event. I have to say for a virtual event that it was excellent. The content this year was particularly strong and I think the fact that we were virtual and therefore reaching a bigger audience than normal was great in that respect. As per my "bit of a moan" about on-line events in the last edition of our magazine – I was still a tad disappointed with the networking side of things. I hasten to add that this is in no way anyone's fault and the platform chosen to run the event was fine – but goodness me I do miss the face to face. Having said that I will have a slight moan – I attempted to make contact with quite a few people and received only 50% replies back from my messages. I suspect that this was due to the fact that many of the delegates simply just didn't enter the networking area to see if they had any messages. Or maybe (thinking about it) they were in fact fully aware of my request but chose to ignore it (and I have to say I can't really blame them!) Whatever the reason when you are face to face it's far more difficult to escape or ignore.

One part I really enjoyed was the panel discussion and video clips of past presidents (well I would say that, wouldn't I). Actually I had no idea if I would feature and was a little nervous as the filming for those clips was done in time for when ILAS was originally scheduled in 2020 – so I couldn't quite remember what I had said – luckily I don't think it was too

silly or outrageous. Anyway the real enjoyment for me came from seeing and hearing the discussion between our AILU Officers. It filled me with confidence to see such a considered and intelligent bunch at the helm – and in the majority (apologies Dave) quite a youthful lot. Which brings me to diversity – which of course can take many forms (by definition) and I think age diversity is incredibly important in addition to all the other forms. What a joy to see young(ish) folks (good grief, that makes me sound old) with such a passion and drive for our industry. When I was President I made sure we got on with recruiting to increase diversity in our committee. This has and must continue and I am particularly encouraged by the Early Career Researchers Committee – a fabulous resource from which to nurture, encourage and mine for new and diverse talent to really make a difference and push our industry forward.

Finally a big thank you and congratulations to the AILU team for delivering an excellent ILAS!

**Ric Allott**  
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