

EPSRC HiFFUT Fellowship Project Meeting Minutes

Date of Meeting: 5 April 2017

Location of Meeting: Department of Physics, University of Warwick

Present: Colin Edge^{CE} (DynOptic Systems), Noel Kerr^{NK} (EES Research), Rob Turner^{RT} (Katronic), Steve Dixon^{SD} (University of Warwick), Andrew Feeney^{AF} (University of Warwick), Daniel Fratzscher^{DF} (FLEXIM - Skype)

20 April 2017

Dear project partners,

Thank you for your attendance at the meeting, I hope you found it both informative and useful. The key points from the meeting are summarised below.

- AF gave an update presentation on the research which has been completed in the last two to three months since the HiFFUT Kick-Off meeting.
- A general discussion followed on the key developments from this work, including feedback from each of the project partners.
- A general discussion of the work packages and key deliverables followed.
 - Drive the flexural transducer far away from resonance and investigate the response, including the interaction with a receiver sensor.
 - Incorporate electrical and mechanical damping into the flexural transducer to study the effect on the ring-down response.
 - CE suggested that the response of the receive transducer may not have the same features as the measured response of the Polytec laser Doppler vibrometer on the generator, and therefore producing a compromise in the frequency response.
 - NK proposed investigation of transit-time cross-correlation with flexural transducers in gas flow meters.
 - CE suggested anemometry and utilising flexural transducers in application, but propagation of the energy at an angle.
 - DF is very interested to see electrical impedance measurements of bismuth-titanate transducers at different temperatures.
- The meeting concluded where September 2017 was proposed as the optimal time for the next HiFFUT meeting.

Actions

1. AF and SD to look at incorporating electrical and mechanical damping into the transducer configuration.

2. AF will send out any interesting results from the electrical impedance tests at different temperatures on the bismuth-titanate transducers, when available.
3. AF to construct and test the high-temperature flexural transducers.
4. AF and SD to work closely with NK on some application testing of the flexural ultrasonic transducers.
5. AF will conduct experiments based on the suggestion of CE regarding the Polytec laser Doppler vibrometer set-up, in April and May 2017.
6. AF to coordinate a suitable date and send out arrangements for the September 2017 meeting at the University of Warwick.

Again, let us know if there are any questions, or if there is something specific you would like to see in development which would be applicable to your own line of work. Also, contact me if you see anything here which has been recorded in error so I can amend it.

Kind regards,

Andrew

Dr Andrew Feeney
Research Fellow, Centre for Industrial Ultrasonics