

University Road  
Highfield  
Southampton SO17 1BJ

Email s.sinayoko@soton.ac.uk  
Office +44 (0)23 8059 3082  
Mobile +44 (0)7 515 396 988  
Web www.sinayoko.com

## Samuel Sinayoko

### Research Experience

---

Oct 2013–Present	<b>University of Southampton</b> Brunel Research Fellow, Royal Commission for the Exhibition of 1851, ISVR Acoustic energy in turbulent flows
Jun 2011–Sep 2013	<b>University of Cambridge</b> Research Associate, Department of Engineering Identified and fixed long standing error in trailing edge noise theory [2]
Oct 2010–May 2011	<b>University of Southampton</b> Research Associate, ISVR (self-funded under EPSRC Doctoral Prize) Separated acoustics from hydrodynamics in a turbulent jet [1, 7]
Sep 2005–Aug 2006	<b>Peugeot Citroen S.A.</b> , Vélizy, France, Research intern, Fluid Mechanics and Aeroacoustics Research Experimental (PIV) and numerical (Lattice Boltzmann) investigation of side mirrors

### Education

---

Oct 2007–Sep 2010	<b>PhD in Aeroacoustics</b> University of Southampton, ISVR, UK Created new aeroacoustic theory [4]. Identified sound sources in laminar jet [3]
Sep 2003–Sep 2007	<b>MSc in Sound and Vibration – MEng in Mechanical Engineering</b> Double degree
Sep 2006–Sep 2007	MSc, University of Southampton, ISVR, UK (distinction) Dissertation: derived multi-mode directivity from ducts with flow [5]
Sep 2003–Sep 2007	MEng, École des Ponts ParisTech, France
Sep 2000–Jun 2003	<b>Classes Préparatoires aux Grandes Écoles</b> Maths and Physics training, lycée Louis-le-Grand, Paris, France

### Awards

---

Oct 2013 – Oct 2016	<b>The 2013 Brunel Fellowship</b> Royal Commission for the Exhibition of 1851 Awarded 3 year research grant to work on acoustic energy in turbulent flows.
Oct 2012 – Oct 2014	<b>College Research Associate Membership</b> Emmanuel College College affiliation for 2 years.
Sep 2010 – Sep 2011	<b>EPSRC Doctoral Prize</b> Engineering and Physical Sciences Research Council (EPSRC) Awarded one year research grant to extend PhD work to turbulent jets
June 2010	<b>Best Student Presentation</b> Council of European Aerospace Societies (CEAS) 16th AIAA/CEAS Aeroacoustics Conference, Stockholm

## Teaching

---

Sep 2013 – Jan 2014	Python programming (First year) University of Southampton
Feb 2013 – May 2013	Thermofluids (First year) Emmanuel College, Cambridge
Oct 2011 – May 2012	Mathematical methods for Engineers (First year) Emmanuel College, Cambridge
Sep 2008 – Feb 2009	Mathematics for Engineers (First year) School of Mathematics, University of Southampton

## Computer Systems and Software

---

Programming languages	Python, Matlab, Fortran 90/95, C++
Scientific programming	Numpy, Scipy, f2py, OpenMP, MPI, SAGE, Mathematica
Productivity suite	Emacs, L <sup>A</sup> T <sub>E</sub> X, Beamer, Mendeley, Zotero, Asymptote
Platforms	Linux, Mac OS X, MS-Windows

## Invited Talks / Lectures

---

22 November 2013	University of Cambridge, UK Fluids Seminar, Department of Engineering, Division A <i>From noise in jets &amp; wind turbines to relativity</i>
31 March 2011	Ecole Centrale Lyon, France Centre Acoustique, Laboratoire de Mecaniques des Fluides et d'Acoustique <i>Decomposition de l'écoulement et sources aeroacoustiques</i>
24 March 2011	Institut P', Poitiers, France Fluides, Thermique et Combustion <i>Computing the physical sources of sound in a laminar jet</i>
October 2010	University of Cambridge, Cambridge, UK Department of Applied Mathematics and Theoretical Physics <i>Flow decomposition and aerodynamic noise generation</i>

## Publications

---

### Journals

- [1] A. Agarwal, S. Sinayoko, and R. Sandberg. On wavenumber spectra for sound within subsonic jets. arXiv:131.5358, Nov. **2013**, submitted to *Journal of the Acoustical Society of America*.
- [2] S. Sinayoko, M. Kingan, and A. Agarwal. Trailing edge noise theory for rotating blades in uniform flow. *Proceedings of the Royal Society A*, vol. 469 no. 2157, **2013**.
- [3] S. Sinayoko and A. Agarwal. The silent base flow and the sound sources in a laminar jet. *Journal of the Acoustical Society of America*, 131:1959–1968, **2012**.
- [4] S. Sinayoko, A. Agarwal, and Z. Hu. Flow decomposition and aerodynamic noise generation. *Journal of Fluid Mechanics*, 668:335–350, **2011**.
- [5] S. Sinayoko, P. F. Joseph, and A. McAlpine. Multimode radiation from an unflanged, semi-infinite circular duct with uniform flow. *Journal of the Acoustical Society of America*, 127(4):2159–2168, **2010**.

### Conferences and workshops

- [6] S. Sinayoko, and A. Agarwal. A comparison of the silent base flow and vortex sound analogy sources in high speed subsonic jets. *AIAA paper 2013-2086*, **2013**.

- [7] Y. B. Baqui, A. Agarwal, A. Cavalieri, S. Sinayoko. Nonlinear and linear noise source mechanisms in subsonic jets . *AIAA paper 2013-2087*, **2013**.
- [8] S. Sinayoko, M. Kingan, A. Agarwal. On the effect of acceleration on trailing edge noise from rotating blades. *AIAA paper 2013-2287*, **2013**.
- [9] S. Sinayoko, M. Kingan, and A. Agarwal. Trailing edge noise prediction for rotating blades: analysis and comparison of two classical approaches. *AIAA paper 2012-2302*, **2012**.
- [10] S. Sinayoko, A. Agarwal, and R. Sandberg. Physical sources of sound in laminar and turbulent jets. *AIAA paper 2011-2916*, **2011**.
- [11] S. Sinayoko and A. Agarwal. Flow filtering and the physical sources of aerodynamic sound. *Procedia Engineering*, 6:94–103, **2010**.
- [12] S. Sinayoko and A. Agarwal. On computing the physical sources of jet noise. *AIAA paper 2010-3962*, **2010**.
- [13] S. Sinayoko, A. Agarwal, and Z. Hu. On separating propagating and non-propagating dynamics in fluid-flow equations. *AIAA paper 2009-3381*, **2009**.
- [14] A. Agarwal, G. Gabard, and S. Sinayoko. On the separation of hydrodynamic and acoustic waves in linear free-shear flows. In *Euronoise, Paris*. **2008**.
- [15] A. Agarwal, G. Gabard, S. Sinayoko, and Z. Hu. On separating propagating and non-propagating dynamics in fluid-flow equations. In *ERCOTAC workshop on Noise Source Mechanisms in Turbulent Shear Flows*. **2008**.
- [16] S. Sinayoko, P. F. Joseph, and A. McAlpine. High frequency multimode radiation from ducts with flow. *AIAA paper 2008-2831*, **2008**.

## References

---

Dr Anurag Agarwal	University Lecturer – PhD supervisor and current principal investigator Department of Engineering, University of Cambridge Trumpington Street, Cambridge CB2 1PZ, England +44 (0)1223 332785 • aa406@cam.ac.uk
Professor Philip Joseph	University Professor – MSc supervisor ISVR, University of Southampton University Road, Southampton SO17 1BJ, England +44 (0)2380 592172 • pfj@isvr.soton.ac.uk
Professor Jeremy Astley	University Professor – Director of ISVR ISVR, University of Southampton University Road, Southampton SO17 1BJ, England +44 (0)2380 597038 • rja@isvr.soton.ac.uk
Professor Dame A. Dowling	University Professor – Head of Department of Engineering Department of Engineering, University of Cambridge Trumpington Street, Cambridge CB2 1PZ, England +44 (0)1223 332739 • apd1@cam.ac.uk