



Thematic Network on Silicon on Insulator Technology, Devices and Circuits.  
[IST-1-506653-CA]

### EUROSIO "Who is Who" Guide

#### *Name of the organisation*

<i>Organization Legal name:</i>	<b>The Queen's University of Belfast</b>
<i>Organization short name:</i>	QUB
<i>Internet homepage:</i>	<b><a href="http://www.ee.qub.ac.uk/nisrc">http://www.ee.qub.ac.uk/nisrc</a></b>

#### *Contact person*

<i>Name:</i>	<i>Gamble</i>	<i>Title:</i>	<i>Prof</i>
<i>First name:</i>	<i>Harold</i>	<i>Sex:</i>	<i>M</i>
<i>Phone:</i>	<i>44 (0)2890974063</i>	<i>E-mail:</i>	<i><a href="mailto:h.gamble@qub.ac.uk">h.gamble@qub.ac.uk</a></i>
<i>Postal Address</i>	<i>School of Electrical &amp; Electronic Engineering, Ashby Building, Stranmillis Road, Belfast, N.Ireland, BT9 5AH</i>		

#### **Other Senior Researchers:** (up to 10 names, please include e-mail address)

Mervyn Armstrong ([b.armstrong@qub.ac.uk](mailto:b.armstrong@qub.ac.uk)) Neil Mitchell ([n.mitchell@qub.ac.uk](mailto:n.mitchell@qub.ac.uk))  
Alastair Armstrong ([a.armstrong@ee.qub.ac.uk](mailto:a.armstrong@ee.qub.ac.uk)) Paul Baine ([p.baine@qub.ac.uk](mailto:p.baine@qub.ac.uk))  
David McNeill ([dw.mcneill@qub.ac.uk](mailto:dw.mcneill@qub.ac.uk)) John Montgomery ([j.montgomery@qub.ac.uk](mailto:j.montgomery@qub.ac.uk))

#### **Experience and expertise fields:** (50 words)

QUB has 40 years experience in silicon device technology and simulation.  
Experienced in producing novel SOI structures including the incorporation of tungsten silicide layers for minimising series resistance and increasing cross talk suppression.  
Optimisation of SOI structures for RF ICs, MMICs and MEMS applications.  
Modelling of semiconductor devices and circuits.

#### **Facilities and Equipment:**

Complete silicon fabrication facility for 100-150 mm wafers.  
Silicon wafer bonding with precision grinding and polishing.  
Epitaxy for Si and SiGe, BESOI, SmartCut for SOI  
e-beam lithography, double sided alignment, g-line stepper, thick PR  
ICP deep trench etching.  
CVD of tungsten, tungsten silicide, cobalt and copper.  
Atomic layer deposition of HfO<sub>2</sub> and WN.  
Silvaco simulation tools and Tanner layout CAD and mask making capability.  
Electrical measurement systems for I-V and C-V characterisation.  
High frequency measurements up to 110GHz on heated chuck.

#### **Three last international research projects:**