



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

## EUROSIO "Who is Who" Guide

<b>Name of the organisation</b>	
<i>Organization Legal name:</i>	<b>National University of Ireland, University College Cork, Tyndall National Institute</b>
<i>Organization short name:</i>	TNI (incorporating NMRC)
<i>Internet homepage:</i>	<b>www.tyndall.ie</b>

<b>Contact person</b>			
<i>Name:</i>	<i>Sotomayor Torres</i>	<i>Title:</i>	<i>Prof Dr</i>
<i>First name:</i>	<i>Clivia M.</i>	<i>Sex:</i>	<i>Female</i>
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<i>Postal Address</i>	<i>Tyndall National Institute, Lea Maltings, Prospect Row, Cork, Ireland</i>		

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

1. Dr Marc Zelsmann ([marc.zelsmann@tyndall.ie](mailto:marc.zelsmann@tyndall.ie))
2. Dr Fredrik Jonsson ([fredrik.jonsson@tyndall.ie](mailto:fredrik.jonsson@tyndall.ie))
- 3) Dr Vladimir Lavayen ([vladimir.lavayen@tyndall.ie](mailto:vladimir.lavayen@tyndall.ie))

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

Dr Zelsmann is an expert in SOI 2-dimensional photonic crystal waveguides (design, fabrication and characterisation) and nanoimprint lithography. Dr Jonsson is an expert in the fabrication and characterisation of optics-inspired SOI-organic structures and non-linear magnetic photonic crystals. Dr Lavayen is an expert in functional nanotubes and is developing methods to integrate non-carbon nanotubes on silicon platforms. Prof Sotomayor Torres expertise is in electron-phonon interaction, laser spectroscopy and optical transitions in low dimensional structures.

**Facilities and Equipment:**

Access to a full 100 nm Si fabrication line, electron beam pattern generator, focused ion beam and associated clean-room facilities. As part of the Tyndall National Institute access to a whole range of fabrication, design, characterisation and testing equipment is available. The Photonics Nanostructures Group led by Prof Sotomayor Torres is setting up a set of optics laboratories, due to open in January 2005, for cw optical spectroscopy at variable temperatures and magnetic fields, such luminescence, absorption, Raman scattering (two triple Raman spectrometers: one for the Visible and NIR, the other for the visible-UV) all equipped with suitable lasers. The group has also AFM, SEM, nanoimprint tools, calibrated spectroradiometers, waveguide characterisation and modules for photonic crystal sedimentation and characterisation. The group is equipped with a 8T superconducting magnet and associated electronics for quantum transport measurements.

**Three last international research projects:**

- 1) EU IST 1999-13415 (CHANIL), 2000-2002.
- 2) EU Growth programme, GRD1-2000-25592 (MONALISA), 2001-2003.
- 3) EU IST 510162, Photonic Hybrid Architectures based on two- and three-dimensional silicon photonic crystals, (PHAT) 2004-2006