

# THEO MURPHY INTERNATIONAL SCIENTIFIC MEETING

## Heterotic computing: exploiting hybrid computational devices

The Royal Society at Chicheley Hall: Home of the Kavli Royal Society International Centre, Buckinghamshire

Organised by Dr Viv Kendon, Professor Susan Stepney and Dr Angelika Sebald

Thursday 7 - Friday 8 November 2013

DAY 1				DAY 2			
<b>Session 1: Physics/quantum computing: some hybrid examples</b> <b>Chair: Tony Hey CBE FEng</b>		<b>Session 2: Biological/natural computing: challenges and inspiration</b> <b>Chair: Ottoline Leyser CBE FRS</b>		<b>Session 3: Chemical/material computing: diverse substrates</b> <b>Chair: Malcolm Levitt FRS</b>		<b>Session 4: Hybrid/heterotic computing: framework and future</b> <b>Chair: Tony Hoare FEng FRS</b>	
<b>09.00</b>	Welcome by Royal Society & lead organiser						
<b>09.05</b>	Quantum and classical resources in measurement-based quantum computation <b>Janet Anders</b>	<b>13.30</b>	Self-similarity and recursion in algorithmic DNA self-assembly <b>Natasha Jonoska</b>	<b>09.00</b>	Chemical computing with Belousov-Zhabotinsky Reaction <b>Jerzy Górecki</b>	<b>13.30</b>	Heterotic computing <b>Susan Stepney</b>
<b>09.30</b>	Discussion	<b>14.00</b>	Discussion	<b>09.30</b>	Discussion	<b>14.00</b>	Discussion
<b>09.45</b>	Hybrid quantum computers: a "one for all and all for one" approach with superconductors and spin ensembles <b>Klaus Mølmer</b>	<b>14.15</b>	Physarum computing: from reaction-diffusion to slime mould <b>Andy Adamatzky</b>	<b>09.45</b>	Spatial computing: a unifying approach to computational materials <b>Jacob Beal</b>	<b>14.15</b>	Theoretical frameworks <b>Samson Abramsky FRS</b>
<b>10.15</b>	Discussion	<b>14.45</b>	Discussion	<b>10.15</b>	Discussion	<b>14.45</b>	Discussion
<b>10.30</b>	<b>Coffee</b>	<b>15.00</b>	<b>Tea</b>	<b>10.30</b>	<b>Coffee</b>	<b>15.00</b>	<b>Tea</b>
<b>11.00</b>	NMR classical computation <b>Matthias Bechmann</b>	<b>15.30</b>	Toward a 'Siliconeural' computer: technological successes and challenges <b>Alan Murray</b>	<b>11.00</b>	Towards the assembly and programming of chemical computers <b>Lee Cronin</b>	<b>15.30</b>	Panel discussion and summary
<b>11.30</b>	Discussion	<b>16.00</b>	Discussion	<b>11.30</b>	Discussion		
<b>11.45</b>	Theory and practice of molecular computing with DNA <b>Damien Woods</b>	<b>16.15</b>	Poster session	<b>11.45</b>	Evolution in materio: evolving computation in materials <b>Julian Miller</b>		
<b>12.15</b>	Discussion	<b>16.45</b>	Discussion	<b>12.15</b>	Discussion		
<b>12.30</b>	<b>LUNCH</b>	<b>17.00</b>	<b>CLOSE</b>	<b>12.30</b>	<b>LUNCH</b>	<b>17.00</b>	<b>CLOSE</b>