



Workshop on Diamond single crystals for 3rd and 4th generation X-ray sources

24-25 May, 2004

Monday, 24 May 2004

- 8:30-9:00 Registration
- 9:00-9:05 Opening of the workshop by the organisers
- 9:05-9:15 Welcome by a **Director of Research**, ESRF

Diamonds and their applications

Chairman: Simon Connell

- 9:15-10:00 Diamond in X-ray optics **Andreas Freund**
ESRF, France
- 10:00-10:30 Applications of synthetic IIa
diamonds at SPring-8 **Tetsuya Ishikawa**
SPring-8, Japan
- 10:30-11:00 *Coffee break*

Diamond growth/Production, post-growth treatment

Chairman: Tetsuya Ishikawa

- 11:00-11:45 Physics of diamond **Simon Connell**
Univ. of the
Witwatersrand, South
Africa
- 11:45-12:15 Growth of high-quality large
diamond crystals under high
pressure and high temperature **Hitoshi Sumiya**
Sumitomo Electric
Industries, Japan
- 12:15-14:00 *Lunch at the ESRF Canteen*

Chairman: John Morse

- 14:00-14:30 Growth of single crystal CVD
diamond **Bradford Pate/Jim
Butler**
Naval Research
Laboratory, USA
- 14:30-15:00 Choice of diamond type, Ib or IIa,
for use in X-ray optics:
implications for HPHT synthesis **Joh Hansen**
Element Six, South
Africa

15:00-15:30	Processing diamonds for synchrotron related applications	Miklos Rebak Univ. of the Witwatersrand, South Africa
15:30-15:50	Stain in treated and untreated single crystal CVD diamond	Patrick J. Doering Apollo Diamond, Inc., USA
15:50-16:20	<i>Coffee break</i>	

Characterisation, further applications

Chairman: Joanna Hoszowska

16:20-16:40	Crystal quality investigated by X-ray diffraction topography	Jürgen Härtwig ESRF, France
16:40-17:00	The rocking curve imaging method: visualizing the lattice quality of a crystal	Daniel Lübbert HASLAB, Germany
17:00-18:00	Origin and evolution of lumps in European pancake-diamonds	Dr. Eightech Institute for Pancake Research (IPR), Freilassing
18:30	<i>Bus departure</i>	
19:00	<i>Workshop Dinner</i>	
22:30	<i>Return to Grenoble (Hotels and ESRF)</i>	

Tuesday, 25 May 2004

Characterisation, further applications

Chairman: Miklos Rebak

9:00-9:20	Surface characterisation	Benno Vrolijk Element Six, NL
9:20-9:30	Application of single crystal diamonds for detectors at the ESRF	John Morse ESRF, France
9:30-9:50	Single crystal CVD diamond for Detector Applications	Andrew Whitehead Element Six, UK
9:50-10:10	Diamond for DAC	Herman Godfried Element Six, NL
10:10-10:30	X-ray topographic investigation of diamond anvils for high pressure generation - Correlation between defects and early failure	Agnès Dewaele CEA/DPTA, France
10:30-11:00	<i>Coffee break</i>	

Coherence properties, further characterization

Chairman: Horst Schulte-Schrepping

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| 11:00-11:30 | Coherent imaging: applications and optics requirements | Peter Cloetens
ESRF, France |
| 11:30-11:50 | Characterisation of synthetic IIa diamonds at SPring8 | Kenji Tamasaku
SPring8, Japan |
| 11:50-12:10 | Diamond synthetic single crystals: characterisation of crystalline quality and coherence preservation | Joanna Hoszowska
ESRF, France |
| 12:10-14:00 | <i>Lunch at the ESRF Canteen</i> | |

Chairman: Christian Morawe

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| 14:00-14:30 | Diamond for 4th generation X-ray sources | Horst Schulte-Schrepping
HASYLAB, Germany |
| 14:30-14:50 | Diamond crystals under extreme heat-load | Lin Zhang
ESRF, France |
| 14:50-15:10 | X-ray topography and tomography studies of surface damage in etched diamond-crystal plates | Albert T. Macrander
APS, USA |
| 15:10-15:30 | The linac coherent light source and its X-ray optics needs | John Arthur
SSRL, USA |
| 15:30-15:50 | Energy recovery linac source properties and X-ray optics needs | Qun Shen
CHESS Cornell, USA |
| 15:50-16:10 | <i>Coffee break</i> | |

Chairman: Andreas Freund

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| 16:10 | Round table discussion, conclusion | |
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