



## SPS-XRPD 3 WORKSHOP

### 3<sup>rd</sup> Spring Pharmaceutical Synchrotron X-Ray Powder Diffraction Workshop

**19<sup>th</sup>/20<sup>th</sup> May 2023**

Purdue University - Burton D. Morgan Center for Entrepreneurship MRGN, Room 121  
1201 W. State Street West Lafayette, IN 47907 West Lafayette, IN 47906, USA

[Workshop website link](#)

Day 1	
8:00 am – 9:00 am	Get together breakfast & Registration
9:00 am – 10:30 am	Background to the workshop (25+5m): <ul style="list-style-type: none"> <li>- <i>Polymorphism in Pharmaceutical Applications</i> (<b>Steve Byrn &amp; Pam Smith</b>, Purdue University/Improved Pharma, USA)</li> <li>- <i>Synchrotron XRPD</i> (<b>Fabia Gozzo</b>, Excelsus Structural Solutions, Switzerland)</li> <li>- <i>Pair Distribution Function in Pharma</i> (<b>Chris Benmore</b>, APS, USA)</li> </ul>
10:30 am – 11:00 am	Further questions to speakers
11:00 am – 12:30 am	Networking lunch & real-time Acoustic Levitator demo
12:30 pm – 12:35 pm	Welcome to the SPS-XRPD workshop
12:30 pm – 3:00 pm	<b>Regulatory aspects</b> (25+5m) <ul style="list-style-type: none"> <li>• <i>Technical and Regulatory Aspects of Managing Solid Form Transformations in Drug Product</i> (<b>Anisha Patel</b>, Merck &amp; Co., Inc., USA)</li> <li>• <i>XRPD Role in Pharma Products Characterization and Control: Quality Frameworks and Guidelines</i> (<b>Matteo Daldosso</b>, Aptuit Verona– Evotec company, Italy)</li> </ul>
	<b>Role of polymorphism in Intellectual property rights</b> (25+5m) <ul style="list-style-type: none"> <li>• <i>Patent filing, patent litigation and the Hatch-Waxman Act</i> (<b>Eyal Barash</b>, Barash Law LLC, USA)</li> <li>• <i>Patent litigation: The Originator Perspective</i> (<b>Einar Stole</b>, Covington &amp; Burling LLP, USA)</li> <li>• <i>Patent Litigation: The Generic Perspective</i> (<b>Carolyn Blessing</b>, Locke Lord LLP, USA)</li> </ul>



3:00 pm – 4:30 pm	Coffee break & snacks and Round Table Discussion –Further questions to RA and IP speakers - (Moderator: <b>Steve Byrn</b> )
4:30 pm – 7:00 pm	<p><b>Synchrotron advanced instrumentation and applications in Pharma</b> (25+5m)</p> <ul style="list-style-type: none"> <li><i>The Swiss Light Source and ALBA Powder Diffraction Stations</i> (<b>Mickael Morin</b>, Excelsus Structural Solutions, Switzerland)</li> <li><i>The APS High-resolution Powder Diffraction beamline</i> (<b>Saul Lapidus</b>, APS, USA)</li> <li><i>The industry-oriented powder diffraction and total scattering beamlines P02.1/P25 at PETRA III</i> (<b>Henrik Jeppesen</b>, DESY, Germany)</li> <li><i>Feasibility of Synchrotron XRD for the Analysis of Mixture Sub-Samples</i> (<b>Ruba Alajlouni</b>, Improved Pharma, USA)</li> <li><i>Advanced detection and quantification techniques</i> (<b>Mathilde Reinle-Schmitt</b>, Excelsus Structural Solutions, Switzerland)</li> </ul>
7:00pm -7:30 pm	Further questions to speakers - Comments from the audience
From 7:30 pm	Welcome dinner & Networking

Day 2	
From 8:15 am	Breakfast & Networking
9:00 am – 10:30 am	<p><b>Electron Diffraction &amp; SAXS &amp; complementary techniques</b> (25+5m)</p> <ul style="list-style-type: none"> <li><i>Small Angle Scattering technique: an overview</i> (<b>Jan Ilavsky</b>, APS, USA)</li> <li><i>Single crystal X-ray and Electron Diffraction experiments for the pharmaceutical industry: From non-standard crystallization techniques to in-situ-crystallization for ED experiments</i> (<b>Gustavo Santiso</b>, Crystallise!, Switzerland)</li> <li><i>Structure Elucidation Capabilities in the Pharmaceutical Industry: Polymorphs in a Pandemic</i> (<b>Justin Newman</b>, Merck &amp; Co., Inc., USA)</li> </ul>
10:30 am – 11:00 am	Further question to speakers and Coffee break



11:00 am – 12:00 pm	<p><b>Pair Distribution Function instrumentation and applications – Part 1/2:</b> talks (25+5m)</p> <ul style="list-style-type: none"> <li>• <i>APS 11-ID-B PDF-dedicated beamline</i> (<b>Olaf J. Borkiewicz</b>, APS, USA)</li> <li>• <i>Acoustic levitation and the Pair Distribution Function: a structural probe of nonequilibrium processes for pharmaceutical products</i> (<b>Stephen Wilke</b>, APS, USA)</li> </ul>
12:00 pm – 1:00 pm	Lunch
1:00 pm – 3:30 pm	<p><b>Pair Distribution Function instrumentation and applications – Part 2/2:</b> (25+5m)</p> <ul style="list-style-type: none"> <li>• Pair Distribution Function applied to pharmaceuticals (<b>Simon Billinge</b>, Columbia University, USA)</li> <li>• <i>A Deeper Dive into Amorphous Solid Dispersions: Evaluating Stability and Drug-Polymer Interactions using X-ray Pair Distribution Function (PDF) Analysis</i> (<b>Gabriel de Araujo</b>, University of Sao Paulo, Brasil)</li> <li>• <i>Current software options for extracting pair distribution functions from x-ray total scattering data</i> (<b>Leighanne Gallington</b>, APS, USA)</li> <li>• <i>What the Pair Distribution Function (PDF) can tell you about amorphous pharmaceuticals.</i> (<b>Chris Benmore</b>, APS, USA)</li> <li>• <i>Laboratory-based PDF applied to pharmaceuticals: how far can we go?</i> (<b>Natalia Dadivanyan</b>, Panalytical, Germany)</li> </ul>
3:30 pm – 5:30 pm	<p>Round table on role of polymorphism, S-XRPD and PDF- PDF guidelines, an update (Moderators: <b>P. Smith, F. Gozzo, Ch. Benmore &amp; S. Byrn</b>)</p>
5:30 pm – 5:45 pm	<p>Final remarks and announcement of the next SPS-XRPD meeting in Switzerland</p>