

# Pre-Trilateral Briefing — Matthew R Hill Group

For Tony Raftis · Ambient IoT Pty Ltd · 11 May 2026

Source: [matthewrhill.com.au](http://matthewrhill.com.au) — Hill Applied Porous Materials Team, Monash + CSIRO

## 1. Who you're dealing with

Prof. Matthew R Hill — joint Monash University / CSIRO appointment, Melbourne.

- Senior Principal Research Scientist, CSIRO (Nov 2019–present)
- Associate Professor, Monash University
- ARC Future Fellow; 2014 PM's Prize for Science; Malcolm McIntosh Prize 2014; Solomon Award
- GAICD qualified — board-literate, not just an academic
- 105 publications, ~4,150 citations, h-index 35
- 13 patents (2 already licensed); 43 projects worth \$20M+

### Critically — Hill is a commercial operator, not just a publisher:

- CTO of [MOFWorx](#) — CSIRO spin-out producing MOFs at **10 kg/hour** via continuous flow. One of very few groups in the world that can manufacture MOFs at industrial scale.
- Active collaboration with University of Texas at Austin and **EnergyX** (US) on lithium-separation MOFs — so he has experience licensing CSIRO IP into US-based ventures.

**Implication: he speaks both languages — academic chemistry and commercial deal structure. Don't oversimplify the IP/equity conversation; he'll respect a sharp term sheet more than a friendly handshake.**

## 2. Hill's patent portfolio — overlap with Ambient IoT

### Selected filings:

- US10010860B2 — Production of metal-organic frameworks (the MOFWorx manufacturing IP)
- WO2014015383A1 — Gas separation using light-switchable MOFs (with Ladewig, Lyndon; CSIRO + Monash co-applicants)
- 11 others across MOF synthesis, gas separation, membranes

### Direct overlap with your portfolio: **NONE FOUND.**

- No Hill patents on ethylene sensing
- No Hill patents on biomimetic metal-ligand receptors for trace gas detection
- No Hill patents in the chemiresistor / QCM / FBAR sensor space
- His IP is **upstream** (MOF manufacture, gas separation membranes) — yours is **downstream** (sensor + remediation device + ML platform).

This is ideal complementarity, not conflict. He makes the porous host at scale; you bring the receptor chemistry, the device architecture (E-Puck Sentinel V2 — AU 2026904490), the ML model (E-Sentinel — AU 2026903645), and the platform (E-Platform — AU 2026903866). Your AU 2026904494 (Metal-Cystine Sensor Array genus) and the new E-MOF-Receptor provisional already cover receptor-in-host architecture at genus level — you'd be bringing freedom-to-operate on the sensing/integration side.

### 3. Recent publications (2024–2026) — where his attention is

- ZIF-62 glass MOF membrane for H<sub>2</sub> separation (ACS Omega, Feb 2025)
- MOFs for liquid organic hydrogen carriers (Chem Mater, Jan 2025)
- Electrified reformer additive manufacturing (Applied Catalysis B, Feb 2025)
- Carbon capture with M-74 CPT@PTMSP magnetic sponges
- Lithium-sulfur batteries (multiple papers)

**Notably absent:** no recent publications on ethylene sensing, biomimetic receptors, or food/produce.

**Historical signal:** Hill was quoted in *Chemistry World* in 2016 commenting on TruPick (1-MCP-loaded MOF for fruit ripening). Fresh-produce MOF applications have been on his radar for a decade. Lab pivoted to energy (H<sub>2</sub>, Li-S, carbon capture) where funding has been.

**Implication: fresh-produce ethylene is a re-entry opportunity for him, not a new field. Lead with the commercial pull (AgroFresh LOI, semiconductor AMC) — don't re-teach the chemistry.**

### 4. CSIRO IP / licensing posture

- CSIRO MOF portfolio: ~14 patents. Background IP stays with originator; foreground IP negotiated case-by-case.
- Preference for Australian-based partners with long-term commitment, manufacturing intent, export ambitions — you tick all three.
- CSIRO expects a commensurate share of income — typically royalty + sometimes equity. Does not demand control.
- ARC funding rules: IP vests as agreed between collaborating organisations; ARC does not seek to own.
- Licensing revenue reinvested into CSIRO innovation ecosystem — motivated to do deals.

#### Realistic deal shapes:

Shape	What it means	Pros	Cons
License-in	Hill/CSIRO licenses you a specific MOF for E-MOF-Receptor integration	Clean, bounded, predictable royalty	Depends on CSIRO supply / pricing
Joint development	Co-developed receptor-in-MOF; joint foreground IP	Shared cost, faster development	IP carve-outs need careful drafting
MOFWorx supply	MOFWorx manufactures host MOF for your devices; IP split clean	Industrial-scale supply secured	Less leverage on margin
Equity participation	CSIRO/Monash takes small equity in Ambient IoT for IP package	Aligns long-term incentives	Dilution; governance overhead

**Your strongest leverage: you've filed at genus level (AU 2026904494, E-MOF-Receptor) and have application-side pull (AgroFresh, semiconductor AMC). Hill brings host manufacturing and academic legitimacy. The deal should be license + supply, with optional equity — not a full IP transfer.**

## 5. Conflict check — Hill ↔ Wu / Henan / competitors

- No Hill–Wu (Henan) co-authorship found. Clean.
- No Hill–AgroFresh or Hill–Maersk public collaboration. Clean.
- No Hill collaboration with the Cu2Cyt authors (Xu et al., Nat Comm 2026). Clean.
- LinkedIn match "Matthew Hill" at A.P. Moller-Maersk is a different person (VP Direct Transport Sales).

**Conclusion: no conflict to manage. You can bring Hill into the trilateral without cross-contamination risk with the Chinese cuprous-cystine prior art line or your AgroFresh commercial discussions.**

## 6. Co-authors / wider team to know

Person	Affiliation	Likely role
Marta Rubio Martinez	CSIRO	Continuous-flow MOF synthesis (MOFWorx)
Stefan J.D. Smith	Monash + CSIRO	Membranes, gas separation
Huanting Wang	Monash	Membrane processes, water
Mainak Majumder	Monash	Nanomaterials, graphene
Muhammad Munir Sadiq	CSIRO	Synthesis and characterisation

Rubio Martinez and Smith are most likely to be in any technical working session given the host-synthesis focus.

## 7. Strategic recommendation

### Frame it as a complementary stack, not a negotiation:

We've built the sensor chemistry, the device, the ML model and the platform — all under provisional patents in our name. What we don't have is industrial-scale porous host manufacturing. You have that. Let's discuss how MOFWorx supplies us with custom MOF/COF/ZIF hosts under license, with Ambient IoT carrying the application IP and CSIRO/Monash sharing in the revenue stream.

### Three things to have ready:

- **One-page portfolio summary** showing your 13 AU provisionals — Hill needs to see you're not coming empty-handed.
- **Specific host MOF asks** — 2–3 candidate MOFs you want their team to optimise or supply. Frames it as a technical conversation, not a vague 'let's collaborate'.
- **Draft term-sheet sketch** — license-in + supply, royalty range, exclusivity field (ethylene sensing + AMC), territorial scope. Don't open with terms, but have them ready.

### Things to NOT do:

- Don't ask them to develop receptor chemistry from scratch — you already own that IP at genus level.
- Don't agree to assign foreground IP to CSIRO. Joint ownership at most, with you retaining exclusive commercial rights in your fields.
- Don't underestimate Hill's commercial sophistication. He's done the EnergyX deal — he knows how this goes.

## 8. Bottom line

## Green lights

- No IP conflict with your portfolio
- No competitive entanglements with Wu/Henan, AgroFresh, or Cu2Cyt authors
- Hill has prior interest in fresh-produce MOF applications (TruPick 2016)
- MOFWorx solves your manufacturing scale problem
- CSIRO licensing terms commercial and Australian-preference-aligned

## Watch-outs

- Lab focus is energy (H $\blacksquare$ , Li-S, carbon capture), not ethylene — resource allocation needs to be negotiated, not assumed
- CSIRO will expect royalty/equity — budget for that
- Joint foreground IP needs tight drafting — your AU 2026904494 and E-MOF-Receptor provisionals must remain unencumbered as background IP

**You are bringing more to this table than they are. Walk in confident.**

Sources: [matthewrhill.com.au](http://matthewrhill.com.au); [CSIRO MOFs portfolio](#); [MOFWorx](#); CSIRO researcher profile; Google Patents (US10010860B2, WO2014015383A1); Google Scholar publication list 2024–2025; Chemistry World 2016 TruPick coverage.