



## Seminars

| Day 1         | 29 April 2024, Monday  | Form         | Speaker  | Venue             |
|---------------|--|--------------|--|-------------------|
| 8:00 - 8:30   | Breakfast & Registration   |              |  | Outside LT5       |
| 8:30 - 9:00   | Opening  | In-person    | <b>Guest of Honor: Prof. Lee Siang TAI</b><br>Deputy President-Designate for I&E | LT5               |
|               | ezyMRI NerdFest Day-1 Seminar - Session 1 (AM)<br>Moderator: <b>Bernhard Blümich</b> , RWTH Aachen |              |  | LT5               |
| 9:00 - 9:35   | Lecture 1: Addressing Ethical and Legal Challenges of Portable and Accessible MRI                  | Online       | <b>Francis Shen</b> , Harvard Law School   |                   |
| 9:35 - 10:10  | Lecture 2: System & Magnet   | Online/Video | <b>Clarissa Cooley</b> , Harvard Medical/MGH                                     |                   |
| 10:10 - 10:45 | Lecture 3: Imaging at ultra-low field  | Online       | <b>Ed Wu</b> , the University of Hong Kong                                       |                   |
| 10:45 - 11:20 | Lecture 4: Console and sequences   | In-person    | <b>Joseba Alonso</b> , Universidad Politécnica de Valencia                       |                   |
| 11:20 - 13:00 | Lunch & Networking   |              |  | Campus Center, L2 |
|               | ezyMRI NerdFest Day-1 Seminar - Session 2 (PM)<br>Moderator: <b>Wenwei Yu</b> , Chiba University   |              |  | LT5               |
| 13:00 - 13:35 | Lecture 5: Gradient coils  | In-person    | <b>Sebastian Littin</b> , University of Freiburg                                 |                   |
| 13:35 - 13:55 | Introduction of Open-Source Imaging Initiative   | In-person    | <b>Sebastian Littin</b> , University of Freiburg                                 |                   |
| 13:55 - 14:30 | Lecture 6: Portable MRI in Africa  | Video        | <b>Johnes Obungoloch</b><br>Mbarara University of Science & Technology           |                   |
| 14:30 - 15:00 | Lecture 7: Design Aspects of Portable MRI & Hackathon Housekeeping                                 | In-person    | <b>Shaoying HUANG</b> , SUTD   |                   |
| 15:00 - 15:30 | Tea break  |              |  | Outside LT5       |
| 15:30 - 16:05 | Lecture 8: System integration  | Online       | <b>Andrew Webb</b> , Leiden University   | LT5               |
| 16:30 - 17:45 | Instructions for each team   | In-person    | Mentors/Facilitators   | Dyson Labs        |
| 17:45 - 20:30 | Dinner & Networking  |              |  | Campus Center, L2 |



# Hackathon

| Day 2         | 30 April 2024, Tuesday                                      | Venue              |
|---------------|---|--------------------|
| 8:00 - 8:30   | Breakfast & networking                                      | Outside Dyson Lab  |
| 8:30 - 12:00  | Team work 2   | Dyson Labs         |
| 12:00-1:00    | Lunch & networking  | Campus Center, L2  |
| 1:00 - 18:30  | Team work 3 (tea break at 15:00)                            | Dyson Labs         |
| 18:30-20:30   | Team reporting & Dinner                                     | Campus Center, L2  |
|               |   |                    |
| Day 3         | 1 May 2024, Wednesday                                       | Venue              |
| 8:00 - 8:30   | Breakfast & networking                                      | Outside Dyson Lab  |
| 8:30 - 12:00  | Team work 4   | Dyson Labs         |
| 12:00-1:00    | Lunch & networking  | Campus Center, L2  |
| 1:00 - 18:30  | Team work 5 (tea break at 15:00)                            | Dyson Labs         |
| 18:30-20:30   | Team reporting & Dinner                                     | Campus Center, L2  |
|               |   |                    |
| Day 4         | 2 May 2024, Thursday  | Venue              |
| 8:00 - 8:30   | Breakfast & networking                                      | Outside Dyson Lab  |
| 8:30 - 12:00  | Team work 4   | Dyson Labs         |
| 12:00-1:00    | Lunch, <b>Group Photo</b> (Jackie Chan Houses) & networking | Campus Center, L2  |
| 1:00 - 17:00  | Integrating & system testing                                | Dyson Labs         |
| 17:00- 19:00  | Presentation, Award Presentation, & Closing                 | LT5                |
| 17:00-18:30   | Group presentations:<br>5-min Presentations + 3-min video   |                    |
| 18:30-18:40   | Voting  |                    |
| 18:40 - 19:00 | Closing & Award Presentation                                |                    |
| 19:30-22:30   | Closing Party   | Jackie Chan Houses |



# Breakout Sessions (subjected to update)

## Magnet

| Day 1         |   |        |       |         |
|---------------|---|--------|-------|---------|
|               | Tutorial  | Design | Build | Measure |
| 16:30-17:45   | Instruction for each team ( <a href="#">Wenwei YU, Chiba University</a> ) |        |       |         |
|               | Member self-introduction  |        |       |         |
|               | Introduction to the sub-system, learning objectives                       |        |       |         |
|               | Grouping  |        |       |         |
| Day 2         |   |        |       |         |
| 8:30-10:00    | CST tutorial, Magnet ( <a href="#">Linus Lau, RFS-GTECH</a> )             |        |       |         |
| 10:15 - 12:00 | MagTetris & Magnet building ( <a href="#">Tingou, Liang, SUTD</a> )       | x      | x     | x       |
| 13:00 - 15:00 | SolidWorks Tutorial ( <a href="#">SEACAD &amp; NAMIC, SUTD</a> )          |        |       |         |
| 15:00 - 18:15 |   |        |       |         |
| 18:15 - 18:45 | <a href="#">Metrolab demo: hall magnetometer</a>                          |        |       |         |
| Day 3         |   |        |       |         |
| 8:30-10:00    |   | x      | x     | x       |
| 10:15 - 12:00 |   | x      | x     | x       |
| 13:00 - 15:00 |   | x      | x     | x       |
| 15:00 - 18:30 |   | x      | x     | x       |
| Day 4         |   |        |       |         |
| 8:30-10:00    | Characterization of Assembled magnets                                     |        |       | x       |
| 10:15 - 12:00 |   |        |       | x       |
| 1:00 - 17:00  | Integrating & system testing  |        |       |         |
| 17:00- 19:00  | Presentation, Award Presentation, & Closing                               |        |       |         |
| 17:00-18:30   | Group presentations: 5-min Presentations + 3-min video                    |        |       |         |
| 18:30-18:40   | Voting  |        |       |         |
| 18:40 - 19:00 | Closing & Award Presentation  |        |       |         |
| 19:30-22:30   | Closing Party   |        |       |         |



## RF Coils

| Day 1         |   |        |       |         |
|---------------|---|--------|-------|---------|
|               | Tutorial  | Design | Build | Measure |
| 16:30-17:45   | Instruction for each team (Joe Li, LiCi)                              |        |       |         |
|               | Member self-introduction  |        |       |         |
|               | Introduction to the sub-system, learning objectives, RF coil theories |        |       |         |
|               | Grouping  |        |       |         |
| Day 2         |   |        |       |         |
| 8:30-10:00    | RF coil building, shielding, & matching (Joe, Li, LiCi)               | x      | x     | x       |
| 10:15 - 12:00 | CST tutorial, RF coils (Linus Lau, RFS-GTECH)                         |        |       |         |
| 13:00 - 15:00 | SolidWorks Tutorial (SEACAD & NAMIC, SUTD)                            |        |       |         |
| 15:00 - 18:15 |   |        |       |         |
| 18:15 - 18:45 |   |        |       |         |
| Day 3         |   |        |       |         |
| 8:30-10:00    | Balun building (Joe Li, LiCi)   |        |       |         |
| 10:15 - 12:00 |   | x      | x     | x       |
| 13:00 - 15:00 | RF coil integration, fining, & testing (Joe Li, LiCi)                 |        |       |         |
| 15:00 - 18:30 |   | x      | x     | x       |
| Day 4         |   |        |       |         |
| 8:30-10:00    | SNR & SAR   | x      | x     | x       |
| 10:15 - 12:00 |   | x      | x     | x       |
| 1:00 - 17:00  | Integrating & system testing  |        |       |         |
| 17:00- 19:00  | Presentation, Award Presentation, & Closing                           |        |       |         |
| 17:00-18:30   | Group presentations: 5-min Presentations + 3-min video                |        |       |         |
| 18:30-18:40   | Voting  |        |       |         |
| 18:40 - 19:00 | Closing & Award Presentation  |        |       |         |
| 19:30-22:30   | Closing Party   |        |       |         |



# Gradient Coils

| Day 1         |   |        |       |         |
|---------------|---|--------|-------|---------|
|               | Tutorial  | Design | Build | Measure |
| 16:30-17:45   | Instruction for each team ( <a href="#">Sebastian Littin, Freiburg</a> )                                |        |       |         |
|               | Member self-introduction  |        |       |         |
|               | Introduction to the sub-system, learning objectives, gradient coil theories                             |        |       |         |
|               | Grouping  |        |       |         |
| Day 2         |   |        |       |         |
| 8:30-10:00    | Gradient Coil Designs & Manufacturing ( <a href="#">Sebastian Littin, Freiburg</a> )                    |        |       |         |
| 10:15 - 12:00 | Training on the measurements ( <a href="#">Sebastian Littin, Freiburg &amp; Saumitra Kapoor, SUTD</a> ) |        |       |         |
| 13:00 - 15:00 | SolidWorks Tutorial ( <a href="#">SEACAD &amp; NAMIC, SUTD</a> )  |        |       |         |
| 15:00 - 18:15 |   |        |       |         |
| 18:15 - 18:45 | <a href="#">Metrolab demo</a> : hall magnetometer   |        |       |         |
| Day 3         |   |        |       |         |
| 8:30-10:00    |   | x      | x     | x       |
| 10:15 - 12:00 |   | x      | x     | x       |
| 13:00 - 15:00 |   | x      | x     | x       |
| 15:00 - 18:30 |   | x      | x     | x       |
| Day 4         |   |        |       |         |
| 8:30-10:00    | Assemble and test   |        | x     | x       |
| 10:15 - 12:00 |   |        | x     | x       |
| 1:00 - 17:00  | Integrating & system testing  |        |       |         |
| 17:00- 19:00  | Presentation, Award Presentation, & Closing   |        |       |         |
| 17:00-18:30   | Group presentations: 5-min Presentations + 3-min video  |        |       |         |
| 18:30-18:40   | Voting  |        |       |         |
| 18:40 - 19:00 | Closing & Award Presentation  |        |       |         |
| 19:30-22:30   | Closing Party   |        |       |         |



## CONSOLE

| Day 1         |  |        |       |         |
|---------------|--|--------|-------|---------|
|               | Tutorial   | Design | Build | Measure |
| 16:30-17:45   | Instruction for each team ( <a href="#">Joseba Alonso, UPV</a> )                       |        |       |         |
|               | Member self-introduction   |        |       |         |
|               | Introduction to the sub-system, learning objectives                                    |        |       |         |
|               | Grouping   |        |       |         |
| Day 2         |  |        |       |         |
| 8:30-10:00    | Introduction to MaRCos ( <a href="#">Joseba Alonso, UPV</a> )                          |        |       |         |
| 10:15 - 12:00 |  |        |       |         |
| 13:00 - 13:30 | MaRCos Setup & testing ( <a href="#">Joseba Alonso, UPV &amp; JingHan Heng, SUTD</a> ) | x      | x     | x       |
| 13:30 - 15:00 |  | x      | x     | x       |
| 15:00 - 18:15 | Console GUI (20 mins, <a href="#">Saumitra Kapoor, SUTD</a> )                          |        |       |         |
| 18:15 - 18:45 |  | x      | x     | x       |
| Day 3         |  |        |       |         |
| 8:30-10:00    | Build and test GPA ( <a href="#">Marshal Wong &amp; Junqi Yang, Chiba University</a> ) | x      | x     | x       |
| 10:15 - 12:00 |  | x      | x     | x       |
| 13:00 - 15:00 | Build and test duplexer ( <a href="#">Junqi Yang, Chiba University</a> )               | x      | x     | x       |
| 15:00 - 18:30 |  | x      | x     | x       |
| Day 4         |  |        |       |         |
| 8:30-10:00    | Assembly of components & test  |        | x     | x       |
| 10:15 - 12:00 |  |        | x     | x       |
| 1:00 - 17:00  | Integrating & system testing   |        |       |         |
| 17:00- 19:00  | Presentation, Award Presentation, & Closing  |        |       |         |
| 17:00-18:30   | Group presentations: 5-min Presentations + 3-min video                                 |        |       |         |
| 18:30-18:40   | Voting   |        |       |         |
| 18:40 - 19:00 | Closing & Award Presentation   |        |       |         |
| 19:30-22:30   | Closing Party  |        |       |         |



# Product Design

| Day 1         |   |             |             |
|---------------|---|-------------|-------------|
|               | Tutorial  | Discussions | Prototyping |
| 16:30-17:45   | Instruction for each team ( <a href="#">Jacob Kang, SUTD</a> )  |             |             |
|               | Member self-introduction  |             |             |
|               | Introduction to the sub-system, learning objectives   |             |             |
|               | Grouping  |             |             |
| Day 2         |   |             |             |
| 8:30-10:00    | Introduction of Design Techniques ( <a href="#">Jacob Kang, SUTD</a> & <a href="#">Dongjin Song, SHJT</a> ) |             |             |
| 10:15 - 12:00 |   | x           |             |
| 13:00 - 15:00 | SolidWorks Tutorial ( <a href="#">SEACAD &amp; NAMIC, SUTD</a> )  |             |             |
| 15:00 - 18:15 |   |             |             |
| 18:15 - 18:45 |   | x           |             |
| Day 3         |   |             |             |
| 8:30-10:00    |   | x           | x           |
| 10:15 - 12:00 |   | x           | x           |
| 13:00 - 15:00 |   | x           | x           |
| 15:00 - 18:30 |   | x           | x           |
| Day 4         |   |             |             |
| 8:30-10:00    |   | x           | x           |
| 10:15 - 12:00 |   | x           | x           |
| 1:00 - 17:00  | Integrating & system testing  |             |             |
| 17:00- 19:00  | Presentation, Award Presentation, & Closing   |             |             |
| 17:00-18:30   | Group presentations: 5-min Presentations + 3-min video  |             |             |
| 18:30-18:40   | Voting  |             |             |
| 18:40 - 19:00 | Closing & Award Presentation  |             |             |
| 19:30-22:30   | Closing Party   |             |             |