For Office Use

KTEO reference: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Please COMPLETE, SIGN and SEND the form to KTEO at: **CONFIDENTIAL**

Room R716, 7/F, Core R or EMAIL a softcopy to [kteoip@polyu.edu.hk](https://polyuit-my.sharepoint.com/personal/klung_polyu_edu_hk/Documents/DAY%20１/kteoip@polyu.edu.hk)

**Part 1 - Invention Disclosure[[1]](#footnote-1)**

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| **I. TITLE OF THE INVENTION[[2]](#footnote-2)** |
| English Title:  Chinese Title (if applicable): |
| **II. DESCRIPTION OF THE INVENTION[[3]](#footnote-3)** |
| (a)Please provide a brief **abstract** (or technical summary) of around 250 words of the invention (for publication and patentability assessment purposes). |
|  |
| (b) Please provide an **objective of the invention**, which may be elaborated by describing a relevant technical background of the invention, problem(s) to be solved and commenting on any deficiencies with the existing (state-of-art) technology. |
| (c) Please provide **a full disclosure of technical details of the invention** which explains every aspects of the invention clearly and sufficiently *(Sketches, drawings, photos, reports and graphs/plots with detailed explanations will be helpful.* ***Providing manuscript or drafts for a journal/conference paper is always preferred****, and including supplementary experimental data/details may sometimes further assist understanding the merits of the invention)*  A manuscript is:  available (tentative publication date (if any): ) |
| (d) Please indicate a Technology Readiness Level (based on i definition referring to Appendix A between Level 1 to Level 9, which is closest to the current stage of the invention.  **Technology Readiness Level: \_\_\_\_\_\_\_\_\_\_\_** |
| (e) Please indicate relevant classification(s) of the core technology that the invention relates to:   |  |  |  |  | | --- | --- | --- | --- | | *AI/Big Data* | *Applied Biology* | *Biomedical Engineering* | *Blockchain* | | *Chemistry* | *Computing/Information Technology* | *Construction/Building Service* | *Data Science* | | *Electrical/Electronic Engineering* | *Geo-informatics* | *Industrial Engineering* | *Material Science* | | *Mechanical Engineering* | *Rehabilitation Science* | *Others (Please Specify):* | | |
| (f) Which UGC Patent Classification (see Appendix B) does this invention belongs to? **Choose the closest one**.  **UGC Patent Classification: \_\_\_\_\_\_\_\_\_\_\_** |
| **III. SCIENTIFIC / TECHNICAL MERITS OF THE INVENTION[[4]](#footnote-4)** *(You may write in bullet point format)* |
| (a) Please list **ALL novel/distinguishing features** (or **process steps**) of the invention based on your best knowledge in the relevant technical field(s), and indicate all key features you perceive to be the compulsory parts that enable the invention to work. |
| (b) Please briefly explain what technical solutions/effects are achieved by providing the **novel features/processes** listed in subsection (a) above, in relation to functions performed by these features or results of carrying out certain processes in a method. |
| (c) Please explain how these features in subsection (a) above improve over the present (state-of-art) technology (*e.g.* cheaper to manufacture, more accurate, more reliable, more durable, less parts, simpler) or solves any existing technical problem, individually or as a whole when considering the objective the invention. |
| **IV. ALTERNATIVES / CONTINUATION / FUTURE DEVELOPMENT OF THE INVENTION[[5]](#footnote-5)** |
| (a) Please provide all possible alternative options for any of these novel features (if available) in section III above which may also enable the invention. |
| (b) Is there any continued work on the invention? Are there outstanding challenges to be overcome or other tasks to be done during subsequent development for practical application and implementation? |
| (c) Are there any future modifications or improvements you are thinking of making to the invention? Please describe any foreseeable improvements of the invention. |
| **V. BUSINESS / MARKETING POTENTIAL** |
| (a) What are the immediate and/or future applications of the invention? Please also indicate if it is possible to modify the invention such that the invention may be applicable in other technical fields. |
| (b) Please choose classification(s) that the application of the invention may be applied to:   |  |  |  |  |  | | --- | --- | --- | --- | --- | | *Bio Tech / Pharmaceutical* | *Energy Tech* | *Fashion & Textile* | *FinTech* | *Food Tech* | | *Green Tech* | *Health Tech* | *ICT* | *Manufacturing Tech* | *Material Tech* | | *Property Tech* | *Robotics* | *Smart Hardware* | *Social/Ed Tech* | *Others*  *(Please specify)* | |
| (c) Which industry may potential licensees come from?(Technologies may be commercialized by licensing the IP rights to an external company in the relevant industry). Or, would the potential licensee be a start-up company established by inventor(s) or PolyU member(s)? Please list companies/parties which have already expressed an interest in licensing the IP, if any. |
| (d) Are there any commercially available products (if any) with similar technical features or may address, at least in part, the same technical problem identified in sections II or III above? |
| **VI. CONCEPTION AND EXPLOITATION OF THE INVENTION[[6]](#footnote-6)** |
| (a) Please indicate all physical location(s) where the invention was conceived or where the substantive part of the technical solution was achieved, and where the testing records / prototypes of invention are kept. If the above was done from multiple locations, please specify what solution was achieved or what step was taken at each location.  Hong Kong  Mainland China  Others (please specify): |
| (b) For patent applications processed by SZRI only, please indicate whether the invention may be commercialized outside Mainland China, including Hong Kong in the future:  Yes  No |

**Part 2 – Patent Application**

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| **VII. PATENT FILING/ASSESSMENT RECOMMENDATION[[7]](#footnote-7)** |
| Please specify all potential markets or manufacturing locations of the invention, and their priority. If **Mainland China** is recommended, please indicate also whether markets in **Hong Kong, Macau** or **Taiwan** are commercially important.   |  |  |  |  | | --- | --- | --- | --- | | -- *Mainland China (CN)* | -- *Hong Kong (HK)* | -- *Macau (MO)* | -- *Taiwan (TW)* | | -- *United States (US)* | -- *Canada (CA)* | -- *Europe (EP)* | -- *United Kingdom (GB)* | | -- *Others (Please Specify):* | |  |  | |

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| **VIII. RELATED RESEARCH PROJECT AND FUNDING SOURCE FOR PATENT FILING** |
| (a) Please identify all research projects that led to conception and establishment of the invention.   |  | | --- | | Title of Project Funded: | | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Funding Body: | *National Research Lab/SKL* | | | *PAIR RI/RC* | *Other PolyU RI/RC* | |  | *ITC* | *RGC* | *UGC* | *Others (Please Specify):* | | | | | Contract/Grant No.: | | Collaborator (if any): | | Has a formal agreement been signed?  Yes (Please provide a copy)  No | | Is patent filing a deliverable of the project?  Yes  No | | What is a rough cost estimation (incl. material and manpower) for developing this IP in HKD? | |
|  |
| (b) Does the funding in (a) cover the cost of filing patent applications? If Yes, what is the amount budgeted for patent filings? Please specify the currency and provide a project account code/work programme if available. |
| (c) If the funding in (a) does not cover the cost of filing patent application, please indicate other funding sources (e.g. departmental/project funding or self-funded by inventor), budget amount and associated account code if available. |

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| **IX. CONTRIBUTION TO THE INVENTION** |
| (a) Please state how the inventorship of the intellectual property concerned is shared amongst ALL inventors and briefly describe their contribution to the invention:   |  |  |  |  | | --- | --- | --- | --- | | Name of Inventors | Contribution to Invention | Intellectual Contribution in the invention (Inventorship %) | PolyU Inventors? (Y/N) | |  |  | % |  | |  |  | % |  | |  |  | % |  | |  |  | % |  | | **Total** |  | **100%** |  |   *(Please add more rows if necessary)*  For non-PolyU inventors, please describe the basis of their involvement (for example, collaboration with a fellow institute) and a copy of any agreement or documentation in support of this. |
| (b) Please indicate whether sharing ratio of commercialization benefit[[8]](#footnote-8) amongst inventors should match with the inventorship % state above, as agreed by the inventors.  Yes  No  (c) Please state how the ownership of the IP concerned will be shared, the respective shares of IP right, and all relevant documents (e.g. project agreement) for the agreed IP ownership and benefit sharing ratio.   |  |  | | --- | --- | | Name of Parties | IP Right Ownership Ratio (%) | | The Hong Kong Polytechnic University | % | |  | % | |  | % | |  | % | | **Total** | **100%** | |
| *(Please add more rows if necessary)* |

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| **X. PUBLIC DISCLOSURE, USE OR SALE[[9]](#footnote-9)** | |
| Please list relevant disclosures, public use or sale, both **past** and **anticipated**, and their **dates** below. Please also enclose a copy/link of the disclosure(s) and all related information related to publication/presentation of the subject matters of the invention.  **Title of disclosure:**  **Type of disclosure:** Choose from the list... | |
| **Publication/submission date:** | |
| *(Please add more rows if necessary)* |  |

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| **XI. PRIOR ART SEARCH RESULT [[10]](#footnote-10)** |
| (a) Please confirm a preliminary prior art search has been performed by the inventor(s) according to their best knowledge in the field. **Prior art search performed:**  Yes (**Search platform:** )  No  **Searched keywords:** |
| (b) Please list several (up to 7) indexing terms/phrases for performing additional search if necessary. |
| (c) Please list all related patents and non-patent literatures, and provides copies of documents which the inventor(s) perceive to be relevant to the invention. |
| (d) Please state whether the invention is based on, or in any way related to, another invention whether from the same inventor(s) or not. If yes, please state the KTEO/ITDO reference number of the previous disclosure if the related invention has been previously reported to PolyU, or a history of the research project in concern. |
| (e) If you are aware of any other similar research work or product, please provide links (to internet websites), citations, and/or copies of all related work for record and assessment purpose. |
| **XII. PATENT ASSESSMENT SCORING (EVALUATION BY INVENTOR)** |
| Please refer to the **Patent Assessment Scoring Guideline**, and provide a score to each of the statements/questions below. *(1 – Strongly disagree, 2 – Somewhat disagree, 3 - Neutral, 4 – Agree or 5 – Strongly agree)*   |  |  | | --- | --- | | **Patentability/Enforceability** | **Scoring (1-5)** | | 1. The invention is novel, not obvious and practically useful |  | | 1. It is difficult to bypass the invention to achieve the same technical effect |  | | 1. It is obvious to observe whether the invention has been used by others |  | | **Scientific / Technical Merit** |  | | 1. The invention is a completely new approach, or will change/significantly improve the usual practice in the field |  | | 1. The invention has been sufficiently tested and repeatable experimental results are available |  | | 1. An adopter of the present invention can perform at a higher level (i.e. higher functional performance) than others in the same industry or market |  | | 1. The invention will solve inevitable problems in practice, or has ability to build significant barrier to exclude competitors |  | | 1. The invention is in the field of an emerging technology (i.e. 5 – emerging; 1 - obsolete) |  | | **Business / Market Potential** |  | | 1. The invention may be applied in various applications or in different fields |  | | 1. The invention is a platform technology that can be used as a base or infrastructure upon which other applications, technologies or processes are developed for the end-user |  | | 1. The invention can bring value to industries or a mass market of users or purchasers as solving their genuine hassles and/or bringing extraordinary user experiences |  | | 1. Patents are necessary to derive value from the invention (e.g. attracting investors or supporting growth of spin-offs/startups) |  | | 1. There are strong interests from industry (i.e. 5 – licensee secured, 1 – uncertain) |  | |

**Part 3 – INVENTOR(S) DETAILS AND ASSIGNMENT AND DECLARATION**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Notes to Inventors:**   * *This disclosure is submitted pursuant to the Hong Kong Polytechnic University Policy on Ownership of Intellectual Property (PIP) and Regulation on the Management of Intellectual Property (RMIP), for the purpose of collection of invention disclosure information according to PIP and RMIP (please refer to* [*PolyU Staff Handbook*](https://www.polyu.edu.hk/hro/intranet/staff_handbook/) *if necessary).* * *Inventors are individual who have made* ***substantial efforts or intellectual contributions*** *in conceiving the invention. They must have* ***contributed an essential element of the invention*** *during the evolution of the invention or its reduction to practice.* * *Do not list any inventor gratuitously, a patent presenting false inventorship details will be invalidated and is not enforceable.* * *Please list all inventors and provide their full names as it appears on their identity documents.* * *Inventors have an obligation to ensure they are compliant with any specific (e.g. national security) laws of their home country of origin* * *Inventors should maintain a good practice to keep detailed records about the development of the invention from its conception to building and testing of a working unit. These records should be clearly dated and signed, and the records may be useful during prosecutions of the patent application and in the entire lifecycle of the IP.* | | | | |
| **Inventors’ Declaration#**  I/We, the inventor(s), understand that the Knowledge Transfer and Entrepreneurship Office (KTEO) is in charge of administrating the management of this invention, and PolyU shall have the sole discretion to exploit the Intellectual Property/know-how deriving from the Invention subject to any Joint Ownership Agreements or agreements that PolyU has entered / will enter into with the joint-owner(s).  I/We hereby affirm that I/We am/are the only inventor(s) of this invention and that I/We have not knowingly omitted the inclusion of any other inventor(s) besides me/us and that the information provided in this disclosure is, to the best of my/our knowledge, true and accurate. I/We represent and warrant that each of us has read the completed invention disclosure.  I/We agree to cooperate with PolyU and legal advisors acting on behalf of PolyU on the prosecution of any patent application filed on this invention, including executing all necessary documents for the purpose of pursuing patent protection for the invention.  I/We will make a reasonable commitment of my/our time towards the assessment, patenting and commercialization of the technology.  I/We confirm that this document is signed at my/our free will without coercion from any source and that I/we have, at my/our own cost, taken any legal and other advice as I/we consider necessary.  I/We agree on our relative percent contribution to the technology disclosed, if the percent contribution of each inventor is not indicated, it will be assumed that each contributed equally. I/We agree that revenue derived from the invention, if any, will be distributed per PolyU’s current IP policy, and that each inventor’s revenue share will be determined with reference to the relative percent contribution and/or any subsequent agreement.  **Confirmatory Assignment of PolyU Staff Members#**  In addition to the above declaration, I/We affirm that the invention described in this disclosure was made in course of employment by PolyU or its subsidiaries and/or substantive use of resources of PolyU or its subsidiaries. I/We understand that I/We have a responsibility to (further) report to PolyU any related details including new developments/further improvements of this invention in a timely manner.  I/We hereby acknowledge that all our entire interest in and of the invention herein described, together with further improvements thereof, are the exclusive property of PolyU. To the extent that the invention does not automatically vest in PolyU, I/We hereby irrevocably assign (and/or agree to assign) to PolyU our entire interest in and of the invention herein described, together with further improvements thereof. | | | | |
| **First Inventor** | | | |
| Title:  Mr  Ms  Miss  Dr  Prof. | | | |
| SURNAME, and Given Name: | Chinese Name (if applicable): | | Correspondence Address: |
| Position/Affiliation\*: | Department/Organization: | | Staff or Student No.: |
| Citizenship: | Email.: | | Tel. No.: |
| Signature: | | Date (DD/MM/YYYY): | |

*\* Please specify if the inventor is a PolyU Staff member, PolyU student (please specify type of degree e.g. MPhil, PhD or Joint-degree program), ex-PolyU Member or Non-PolyU Personnel.*

*The first inventor will be the person-of-contact between the Knowledge Transfer and Enterprise Office and the inventors by default. If others should be named as the person-of-contact, please specify: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*

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| --- | --- | --- | --- |
| **Second Inventor (if applicable)** | | | |
| Title:  Mr  Ms  Miss  Dr  Prof. | | | |
| SURNAME, and Given Name: | Chinese Name (if applicable): | | Correspondence Address: |
| Position/Affiliation: | Department/Organization: | | Staff or Student No.: |
| Citizenship: | Email.: | | Tel. No.: |
| Signature: | | Date (DD/MM/YYYY): | |

*(Please add more inventors if necessary)*

*# The Inventors’ Declaration applies to all inventors listed herein (including PolyU Staff Members, PolyU Students, ex-PolyU Members and Non-PolyU Personnel) whereas the Confirmatory Assignment applies only to PolyU Staff Members. Where appropriate, KTEO may ask Non-PolyU inventors to sign a separate assignment.*

**Personal Information Collection Statement (PICS)**

The information collected from you will be used for the purposes of recording and processing intellectual property registration. Failure to provide sufficient personal data may prevent Knowledge Transfer and Entrepreneurship Office (KTEO) from properly recording and registering for the concerned intellectual property.  KTEO may give specified information to other departments within the University and to outside organizations for one or more of the purposes specified above or a purpose that is directly related to any such purpose or purposes.

Under the Personal Data (Privacy) Ordinance, you have the right to request access to and correction of information about you held by us. If you wish to access or correct your personal data held by us, please contact KTEO at [kteoip@polyu.edu.hk](mailto:kteoip@polyu.edu.hk).

**Appendix A - Reference of Technology Readiness Level (TRL)**

1. **TRL for engineering or science related products**

|  |  |
| --- | --- |
| TRL Level | Descriptions |
| 1 | Basic principles observed |
| 2 | Technology concept formulated |
| 3 | Experimental proof of concept |
| 4 | Technology validated in laboratory |
| 5 | Technology validated in relevant environment (industrially relevant environment in the case of key enabling technologies) |
| 6 | Technology demonstrated in relevant environment (industrially relevant environment in the case of key enabling technologies) |
| 7 | System prototype demonstration in operational environment |
| 8 | System complete and qualified |
| 9 | Actual system proven in operational environment (competitive manufacturing in the case of key enabling technologies; or in space) |

Reference: [*https://ec.europa.eu/research/participants/data/ref/h2020/wp/2014\_2015/annexes/h2020-wp1415-annex-g-trl\_en.pdf*](https://ec.europa.eu/research/participants/data/ref/h2020/wp/2014_2015/annexes/h2020-wp1415-annex-g-trl_en.pdf)

1. **TRL for medical related products (Pharmaceutical and Biologics)**

|  |  |
| --- | --- |
| TRL Level | Descriptions |
| 1 | Review of Scientific Knowledge Base |
| 2 | Development of Hypotheses and Experimental Designs |
| 3 | Target/Candidate Identification and Characterization of Preliminary Candidate(s) |
| 4 | Candidate Optimization and Non-GLP In Vivo Demonstration of Activity and Efficacy |
| 5 | Advanced Characterization of Candidate and Initiation of GMP Process Development |
| 6 | GMP Pilot Lot Production, IND Submission, and Phase 1 Clinical Trial(s) |
| 7 | Scale-up, Initiation of GMP Process Validation, and Phase 2 Clinical Trial(s) |
| 8 | Completion of GMP Validation and Consistency Lot Manufacturing, Pivotal Animal Efficacy Studies or Clinical Trials3, and FDA Approval or Licensure |
| 9 | Post-Licensure and Post-Approval Activities |

**For details please refer to** [*https://www.medicalcountermeasures.gov/trl/integrated-trls/*](https://www.medicalcountermeasures.gov/trl/integrated-trls/)

**Appendix B - UGC Patent Classification**

**Appendix C** - **Reference of Features, Advantages and Benefits (FAB) Statement**

[*https://inkforall.com/ai-writing-tools/fab-sales-technique/examples-of-fab-analysis/*](https://inkforall.com/ai-writing-tools/fab-sales-technique/examples-of-fab-analysis/)

**Appendix D - Useful Websites for Patent Prior Art Search**

|  |  |
| --- | --- |
| * ***Google Patents*** | [*https://patents.google.com/*](https://patents.google.com/) |
| * ***European Patent Office*** | [*http://www.epo.org/searching/free/espacenet.html*](http://www.epo.org/searching/free/espacenet.html) |
| * ***United States Patent and Trademark Office*** | [*http://www.uspto.gov/*](http://www.uspto.gov/) |
| * ***China National Intellectual Property Administration*** | [*http://www.cnipa.gov.cn/*](http://www.cnipa.gov.cn/) |
| * ***HKSAR Government Intellectual Property Department*** | [*http://ipsearch.ipd.gov.hk/index.html*](http://ipsearch.ipd.gov.hk/index.html) |
| * ***The World Intellectual Property Organization*** | [*http://www.wipo.int/patentscope/en/*](http://www.wipo.int/patentscope/en/) |

1. (a) This Invention Disclosure Form is intended for facilitating collection of information provided by PolyU inventors, PolyU shall have the sole discretion to exploit the Intellectual Properties/know-how deriving from the Invention herein commercially and to decide whether IP registration in any form should be pursued.

   (b) For Sections II – V, please attach supplementary sheet(s) if necessary. [↑](#footnote-ref-1)
2. A brief description to aid in identifying the invention [↑](#footnote-ref-2)
3. (a) Inventions include new processes, products, apparatus, compositions of matter, living organisms, or improvements to (or new uses for) things that already exist.

   (b) For patent filings, to fulfill sufficiency requirements in patent applications, the description should include explanations that covers all technical aspects related to the invention, such as core components and their functions of the invention, how the invention works or operates and how the invention is made. However, a working prototype is not a mandatory requirement for patentability assessment if the idea/concept is well supported by theories and general knowledge of a skilled person [↑](#footnote-ref-3)
4. Merits of the invention generally include special technical effects and advantages provided by unique features of the invention, as well as technical problems which the invention solves, similar to FAB and E (Features, Advantages, Benefits and Evidence) statements (Explanation of FAB statements - Appendix C). [↑](#footnote-ref-4)
5. For patent filings, providing alternatives in a patent specification will better define the invention with a broader protection scope to be sought in the patent applications, and alternative explanations or descriptions of the invention from a different angle may assist with descripting the invention better. [↑](#footnote-ref-5)
6. (a) It is a national requirement that, for an invention conceived in some countries, e.g. Mainland China (excluding Hong Kong), the applicant must file the first patent application related to the same invention before the Patent Office in the same country, otherwise a foreign filling license must be obtained before filing patent applications with any Patent Offices outside of that country.

   (b) It is also a national requirement that recordal of import/export of technologies must be performed prior to transfer of patents or exploitation of inventions in some countries, e.g. China. [↑](#footnote-ref-6)
7. Geography of patent protections may be based on: (1) Business/commercial need (sales or license) for exclusivity; (2) Licensee’s and key competitor’s manufacturing countries or key markets; (3) Quality of IP protection and enforcement; and (4) ROI and commercial gain vs patent expense incurred in certain countries/regions. [↑](#footnote-ref-7)
8. (a) All Intellectual Property and Materials made by PolyU staffs during their employment with the University according to PolyU’s Policy on Ownership of Intellectual Property (PIP, please refer to section 4 for details), unless otherwise specified or by written agreement approved by the Management of the University.

   (b) Entitlement of proceeds generated by commercialization of the intellectual property concerned will be shared amongst inventors and co-inventors of PolyU. Benefit sharing ratio is generally calculated with reference to substantial intellectual contributions of inventors, and the distribution of net revenue among the inventors, the university, the department of the inventors concerned upon commercialization of intellectual property is stipulated under PolyU’s Regulation on the Management of Intellectual Property (RMIP, please refer to section 9 for details). [↑](#footnote-ref-8)
9. (a) In most countries, except USA, Canada and Australia or other jurisdictions where a grace period of 12 month is allowed, a patent application must be filed before subject matters of the invention have been disclosed, e.g. in form of publication or oral presentation, in a public domain (i.e. without restriction of confidentiality)

   (b) Common types of non-confidential/public disclosures include (non-exhaustive) journal article, conference abstract, oral/poster presentation, disclosure to industry or other third parties, grant proposal, submission for competitions [↑](#footnote-ref-9)
10. (a) There is a duty on all patent applicants to disclose prior art or background information that may be relevant to the patentability of the applicant's invention. If a patent applicant knowingly or intentionally fails to submit prior art to the Patent Office, then any patent that later issues from the patent application may be declared unenforceable.

    (b) “Prior art” covers essentially all patent and non-patent disclosures which are accessible by the public before a patent application is filed, however in practice you are suggested to include only technical disclosures which are closely relevant to the key concepts and core components of the invention.

    (c) Please see Appendix C for a list of useful websites for preliminary prior art search. [↑](#footnote-ref-10)