

Supplementary Material 1. Literature Search Strategy

As described in Section 1.1 of the manuscript, we searched PubMed (MEDLINE), Embase, Web of Science Core Collection, and CNKI from January 2016 to June 2026 (last search: June 30, 2026), restricted to records in English or Chinese. The complete Boolean search strings executed on each platform are reproduced below. Syntax reflects each database's native interface; minor field-tag variations may occur across interface versions.

Eligibility criteria: Inclusion — original research or meta-analyses in peer-reviewed journals; human subjects; English or Chinese language; reporting image quality, diagnostic accuracy, or clinical prognosis of DECT CTPA for PE. Exclusion — reviews, editorials, conference abstracts, case reports, and animal or phantom studies.

1. PubMed (MEDLINE)

- #1 "Radiography, Dual-Energy Scanned Projection"[MeSH] OR "dual-energy CT" OR "spectral CT" OR "dual source CT" OR "dual-layer CT"
- #2 "Pulmonary Embolism"[MeSH] OR "pulmonary embolism" OR "PE" OR "CTPA" OR "CT pulmonary angiography"
- #3 "Computed Tomography Angiography"[MeSH] OR "CT angiography" OR "iodine map" OR "virtual monoenergetic" OR "iodine density"
- #4 #1 AND #2 AND #3
- #5 #4 AND ("2016/01/01"[Date - Publication] : "2026/06/30"[Date - Publication])
- #6 #5 AND (English[Language] OR Chinese[Language])

2. Embase (embase.com)

- #1 'dual energy computed tomography'/exp OR 'dual energy CT' OR 'spectral CT' OR 'dual source ct' OR 'dual layer ct'
- #2 'pulmonary embolism'/exp OR 'pulmonary embolism' OR 'PE' OR 'ctpa' OR 'ct pulmonary angiography'
- #3 'computed tomography angiography'/exp OR 'ct angiography' OR 'iodine map' OR 'virtual monoenergetic' OR 'iodine density'
- #4 #1 AND #2 AND #3
- #5 #4 AND [2016-2026]/py
- #6 #5 AND (english OR chinese)/lim

3. Web of Science Core Collection

- #1 TS=("dual-energy CT" OR "spectral CT" OR "dual source CT" OR "dual-layer CT")
- #2 TS=("pulmonary embolism" OR "PE" OR "CTPA" OR "CT pulmonary angiography")
- #3 TS=("computed tomography angiography" OR "iodine map" OR "virtual monoenergetic" OR "iodine density")
- #4 #1 AND #2 AND #3
- #5 #4 AND PY=(2016-2026)
- #6 #5 AND (English OR Chinese) [Languages]

4. CNKI (Chinese)

- (SU='双能量CT' OR SU='能谱CT' OR SU='双源CT' OR SU='双层探测器CT')
- AND (SU='肺栓塞' OR SU='CT肺动脉造影' OR SU='CTPA')
- AND (SU='碘图' OR SU='虚拟单能' OR SU='碘密度' OR SU='低碘')
- AND YE BETWEEN (2016, 2026)

Note: The Chinese-language search (CNKI) used equivalent subject terms; English and Chinese were the only languages retained. After de-duplication and title/abstract and full-text screening, 26 database records plus 2 pre-2016 foundational references (backward citation tracing) yielded 28 included studies (see Figure 1 and Supplementary Table 1 in the manuscript file).