**Table S1.** Synthesis of the types of lasers used in laser-induced fluorescence studies in the field of cultural heritage.

| No. | Subject/ Material | Fluorescence | Producer / model | Excitation wavelength [nm] | Pulse duration [ns] | Fluence [mJ/cm²] | Repetition rate [Hz] | Spot Size [mm] | Energy/ pulse [mJ] | Reference |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. | Oil colors | LIF | $N_2$ laser | 337.1 | 5 | - | 4 | 1 | - | [1] |
| 2. | Pigments, oil paintings | LIF | He-Cd continuous laser | 325/442 | - | - | - | - | - | [2] |
| | | LIF | KrF excimer laser | 248 | - | - | - | - | - | |
| | | LIF | Q-switched Nd:YAG | 355 | - | - | - | - | - | |
| 3. | Pigments, resins | LIF | Nd:YAG laser | 355 | 0.3 | - | - | - | 10 | [3] |
| 4. | Oil color specimens | LIF | KrF laser | 248 | 18 | - | - | - | 50 | |
| 5. | Stone monuments | LIF / LIDAR | Argon laser | 488 | - | - | - | - | - | [4] |
| 6. | Pigments, binding media of polychrome materials | LIF | KrF laser | 248 | 15 | 3–6 | - | 20 mm² | 0.5–1 | [5] |
| 7. | Detection of green algae and cyanobacteria on stone heritage | LIF / LIDAR | Minilite II Nd: YAG laser | 355 | - | - | - | - | - | [6] |
| 8. | Marble | LIF | Nd:YAG laser | 266 / 355 | 7-10 | - | 10 | 8 | 3-6 | [7] |

| No. | Subject/ Material | Fluorescence | Producer / model | Excitation wavelength [nm] | Pulse duration [ns] | Fluence [mJ/cm²] | Repetition rate [Hz] | Spot Size [mm] | Energy/ pulse [mJ] | Reference |
|---|---|---|---|---|---|---|---|---|---|---|
| 9. | Stone surfaces | LIF/ LIDAR | Nd:YAG laser | 355 | - | - | - | - | - | [8] |
| 10. | Marble, mortars | LIF / LIDAR | Nd:YAG laser | 355 | 8 | - | 20 | - | 30 | [9] |
| 11. | Wall painting materials | LIF | Laser Photonic / LN203C $N_2$ laser | 337 | 1 | - | 50 | - | - | [10] |
| 12. | Organic media in paintings (casein, egg proteins, animal tissues' glue) | EES | Jobin-Yvon Fluoromax | 0.2 s integration time, 0.5 nm step, excitation/emission slits 1-5 nm | | | | | | [11] |
| | | LIF | KrF excimer laser | 248 | 10 | 5 | - | | | |
| | | LIF | Nd:YAG laser | 355 | 10 | 5 | - | | | |
| 13. | Mineral samples | LIF | Nd:YAG Quanta-Ray | 266 | | | | | 1 | [12] |
| | | | | 355 | - | - | 20 | - | 2 | |
| 14. | Biodegradation on ancient painted surfaces | LIF / LIDAR | Thomson DIVA Nd:YAG laser | 355 | 10 | - | 20 | - | 6 | [13] [14] |
| 15. | Stone surfaces | LIF / LIDAR | Nd: YAG laser | 355 | 5 | - | 20 | - | 25 | [15] |

| No. | Subject/ Material | Fluorescence | Producer / model | Excitation wavelength [nm] | Pulse duration [ns] | Fluence [mJ/cm²] | Repetition rate [Hz] | Spot Size [mm] | Energy/ pulse [mJ] | Reference |
|---|---|---|---|---|---|---|---|---|---|---|
| 16. | Fresco analysis | LIF / LIDAR | Thomson DIVA Nd:YAG laser | 266<br>355 | - | - | - | - | 5 | [16] |
| 17. | Binding media (based on milk, egg, animal glues) | LIF | KrF excimer laser | 248 | 10 | 5 | - | 1 x 1 | - | [17] |
| | | LIF | Nd:YAG laser | 355 | | | | | - | |
| | | EES | Jobin-Yvon Fluoromax/ Xe arc lamp | 0.2 s integration time, 0.5 nm step, excitation/emission slits 1-5 nm | | | | | | |
| 18. | Historical documents | LIF | Quantel / Nd:YAG laser | 266 | 6 | 50 | 20 | - | - | [18] |
| 19. | Proteinaceous binders used in paintings | EES | Jobin-Yvon/Horiba Fluoromax-P / Xe arc lamp | 220-450 | Emission recorded between 250-800 nm, 1 nm step | | | | | [19] |
| | | LIF | AG BraggStar 200, TUI Laser, KrF excimer laser | 248 | 15 | 5 | - | 1 x 1 | - | |
| | | LIF | LN203C, Laser Photonics, $N_2$ laser | 337 | 1 | 0.2 | - | 5 x 5 | - | |
| | | LIF | Spectron Laser Systems / Nd:YAG laser | 355 | 10 | 5 | - | - | - | |
| | | LIF | DPS-4,4″-(1,2-ethenediyl)bis(1,1′-biphenyl); Exciton compact dye laser | 405 | - | 0.04 | - | 5 x 5 | - | |
| 20. | Fungal strains | LIF / LIDAR | FLIDAR-3 XeCl laser | 308 | 10 | - | 1-10 | - | - | [20] |

| No. | Subject/ Material | Fluorescence | Producer / model | Excitation wavelength [nm] | Pulse duration [ns] | Fluence [mJ/cm²] | Repetition rate [Hz] | Spot Size [mm] | Energy/ pulse [mJ] | Reference |
|---|---|---|---|---|---|---|---|---|---|---|
| 21. | Egg yolk and white | EES | Jobin-Yvon/Horiba Fluoromax-P | 290 | - | - | - | - | - | [21] |
| | | | | 350 | - | - | - | - | - | |
| 22. | Protein-based binding media, pigments | EES | Jobin-Yvon/Horiba Fluoromax-P / Xe arc lamp | 220-450, 5 nm step | - | - | - | - | - | [22] |
| 23. | Lake pigments | EES | Jovin-Yvon Spex Fluorog 3-2.2 | 490 | - | - | - | - | - | [23] |
| 24. | Monitoring laser cleaning of modern paintings | LIF | LAMBDA Physik Compex 110/ KrF excimer laser | 248 | 20 | 5 | - | - | - | [24] |
| 25. | Ultramarine pigments | LIF | Quantel / CFR-200 graded reflectivity mirror (GRM) Nd:YAG laser | 266 | 8 | 1500 | 20 | 6 | 50 | [25] |
| 26. | Monuments | LIF | Nd:YAG laser | 355 | - | - | - | - | - | [26] |
| | | LIDAR | XeCl excimer laser | 308 | - | - | - | - | - | |
| 27. | Aged marble, Paraloid B72 | LIF | Thompson DIVA / Nd:YAG laser | 266 | 8 | 0.87 | 20 | - | - | [27] |

| No. | Subject/ Material | Fluorescence | Producer / model | Excitation wavelength [nm] | Pulse duration [ns] | Fluence [mJ/cm²] | Repetition rate [Hz] | Spot Size [mm] | Energy/ pulse [mJ] | Reference |
|---|---|---|---|---|---|---|---|---|---|---|
| 28. | Photoautotrophic biodeteriogens | LF LIDAR | CNR-IFAC / XeCl excimer laser | 308 | 10 | - | 2 | - | 30 | [28] |
| | | | Coumarin 102 LC4800 dye laser | 480 | - | - | - | - | - | |
| | | | Spectra Physics, GCR-290 / Nd:YAG laser | 355 | 4-5 | - | 20 | - | 30 | |
| 29. | Triterpenoid paint varnishes | EES | Jobin-Yvon / Fluorolog Xe arc lamp | 250-500 | $\lambda_{em}$=300-600 nm | | | | | [29] |
| 30. | Polymeric materials | EES | Jobin-Yvon/Horiba / Fluorolog Xe arc lamp | 300-500 | Fibers placed at 45°, 5 nm resolution, $\Delta\lambda$=15-225 nm, 5 nm step | | | | | [30] |
| 31. | Pigments identification | EES | Jobin-Yvon/Horiba / Fluorolog 2-1 Xe arc lamp | 300-420 | Front face (23°) detection, $\lambda_{em}$=350-600 nm | | | | | [31] |
| | | TR-LIF | FTSS 355-50, Crylas GmbH/ Nd:YAG laser | 355 | - | 0.00014 | - | - | - | |
| 32. | Marble | LIF | ENEA / Nd:YAG laser | 266 355 | 8 | 0.9 | 20 | - | - | [32] |
| 33. | Tempera paints | EES / SFS | Jobin-Yvon Fluoromax, Xe lamp | 0.2 s integration time, 1 nm step, excitation/emission 2.5 nm slits, 30° angle. | | | | | | [33] |
| 34. | Stone patina | LIF | Quantel, Brilliant B / Nd:YAG laser | 266 | 5 | - | 10 | 1 | 0.1 | [34] |
| 35. | Restoration materials | LIF | ENEA / Nd:YAG laser | 266 355 | - | - | - | - | - | [35] |
| 36. | Mural paintings | LIF | Continuum, Minilite II/ Nd:YAG laser | 355 | 5 | 0.1-1 | 10 | 3 | 8 | [36] |

| No. | Subject/ Material | Fluorescence | Producer / model | Excitation wavelength [nm] | Pulse duration [ns] | Fluence [mJ/cm²] | Repetition rate [Hz] | Spot Size [mm] | Energy/ pulse [mJ] | Reference |
|---|---|---|---|---|---|---|---|---|---|---|
| 37. | Scanning lidar fluorosensor for remote diagnostic of surfaces | LIF scanning / LIDAR | Thomson DIVA / Nd:YAG laser | 266<br>355 | 10 | - | 20 | - | 1.5 | [37] |
| 38. | Pigments | EES | Jobin–Yvon (FluoroMax-4) | 300 | - | - | - | - | - | [38] |
| 39. | Paintings | EES | Jasco Fluorescence Spectrophotometer | 250-480 | - | - | - | - | - | [39] |
| 40. | Pigments, binders, acrylic resins, frescoes | Hyperspectral LIF | Nd:YAG laser | 266<br>355 | 10 | 1 | 20 | - | - | [40] |
| 41. | Frescoes, pigments | LIF | Continuum, Minilite II/ Nd:YAG laser | 355 | 5 | 0.1 - 1 | 10 | 3 | 8 | [36] |
| 42. | Pigments analysis | LIF | Crylas / Nd:YAG | 266 | - | - | - | - | - | [41] |
| | | | Quanta Ray GCR3 / Nd:YAG | 355 | 8 | - | 10 | - | <35 | |
| | | | Semiconductor lasers | 405<br>445<br>532 | - | - | - | - | - | |
| 43. | Medieval miniatures | EES | Jobin Yvon Fluorolog SPEX 212 | 366 | - | - | - | - | - | [42] |
| 44. | Cultural goods | LIF | FTSS 355-50 Crylas / Nd:YAG laser | 355 | 1 | < 140 nJ/cm$^{-2}$ | - | - | 0.07 | [43] |
| 45. | Organic pigments, contemporary art | EES | Jobin-Yvon CP240 | - | - | - | - | - | - | [44] |
| 46. | Frescoes, pigments | LIF | Continuum, Minilite II / Nd:YAG laser | 355 | 5 | 0.1-1 | 10 | 4 | 8 | [45] |
| 47. | Frescoes | LIF | ENEA / Nd:YAG laser | 266 | - | 0.01–0.02 | - | - | 1.5 | [46] |
| 48. | Modern synthetic materials and pigments | LIF scanning | ENEA / Nd:YAG laser | 266 | | | | | | [47] |

| No. | Subject/ Material | Fluorescence | Producer / model | Excitation wavelength [nm] | Pulse duration [ns] | Fluence [mJ/cm²] | Repetition rate [Hz] | Spot Size [mm] | Energy/ pulse [mJ] | Reference |
|---|---|---|---|---|---|---|---|---|---|---|
| 49. | Works of art | LIF | LED | 285<br>375 | - | - | - | - | - | [48] |
| 50. | Plastics identification | LIF scanning | ENEA EX5GAM / KrF excimer laser | 248 | - | - | 500 | 6 x 3 | 16 | [49] |
| 51. | Contemporary artworks | LIF | Opolette by Opotek tunable laser | 220 | 3 | 2000 | 20 | 0.3x1 | 0.003 | [50] |
| 52. | Binders | LIF | Opolette by Opotek tunable laser | 220 | 3 | 1 | 20 | 0.3x1 | 0.003 | [51] |
| 53. | Dammar varnish | LIF | KrF excimer laser | 248 | - | 1 | - | - | - | [52] |
| 54. | White pigments mixtures | EES | Horiba FluoroMax-2 | 365 | - | - | - | - | - | [53] |
| 55. | Frescoes, pigments | Hyperspectral LIF | Nd:YAG laser | 266 | 10 | - | 20 | 1.5 | - | [54] |
| 56. | Rocks, mural paintings | LIF | LS-2147, Lotis II / Nd:YAG laser | 266<br>355<br>532 | 17 | 20 | 10 | 2 | - | [55] |
| 57. | Cultural heritage materials | LIF | Quantel CFR/ Nd:YAG laser | 266<br>532 | 8 | - | - | - | 0-50 | [56] |
| 58. | Stone surfaces | LIF | IFAC-CNR | 405 | - | - | - | - | - | [57] |
| 59. | Optimizing laser cleaning | LIF | LAMBDA PHYSIK/ L.P.X. 205SD KrF excimer laser | 248 | 24 | 5 | - | 1 mm² | - | [58] |
| 60. | Biodegradation of buildings | LIF scanning | ENEA / Thomsom DIVA Nd:YAG laser | 266 | 8 | 0.9 | 20 | - | - | [59] |

| No. | Subject/ Material | Fluorescence | Producer / model | Excitation wavelength [nm] | Pulse duration [ns] | Fluence [mJ/cm²] | Repetition rate [Hz] | Spot Size [mm] | Energy/ pulse [mJ] | Reference |
|---|---|---|---|---|---|---|---|---|---|---|
| 61. | Essential oil efficiency on biodeteriogens | LIF scanning | ENEA / Nd:YAG laser | 266 | - | - | - | - | - | [60] |
| 62. | Painting materials | TG-LIF | ENEA / Nd:YAG laser | 266 | 8 | - | 20 | - | 1.5 | [61] |
| 63. | Phthalocyanine paints | LIF | Nd:YAG laser | 266 | 15 | - | 1 | - | 0.5 | [62] |
| 64. | Painted murals | LIF LIDAR | ENEA LidArt / Nd:YAG laser | 266 | - | < 0.01 | - | - | - | [63] |
| 65. | Historical wooden artwork | LIF | modified DIVA, Thales SAS / Nd-YAG laser | 266 | 8 | < 0.002 | 20 | - | 0.9 | [64] |
| 66. | Pigments | Hyperspectral LIF | Nd:YAG laser | 266 | - | <10000 | - | - | - | [65] |
| 67. | Glass grisailles | LIF | Nd:YAG laser | 266 | 6 | 6 | 10 | 1x2 | - | [66] |
| 68. | Hyperspectral and a multispectral scanning systems intercalibration | LIF | diode-pumped solid-state laser | 266 | - | - | - | - | - | [67] |
| | | | KrF excimer laser | 248 | - | - | < 500 | - | - | |
| 69. | Stained glass windows | LIF | Nd:YAG laser | 266 | 15 | - | - | 1-2 | 6 | [68] |

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