Dear Colleagues,

Here is a bibliography :

For a nice introudction about Pauli Fierz, I would recommand : The notes of Wojciech Dybalski, Non-Relativistic QED, https://wdybalski.faculty.wmi.amu.edu.pl/NRQED-version12.pdf

For an introduction from a physical point of view about quantum field theory : Lectures on Quantum Field Theory, Ashok Das, World Scientific Publishing, (2008).

Very interesting techniques are developped in the following articles :

1) M. Griesemer, E. H. Lieb, M. Loss, Ground States in Non-relativistic Quantum Electrodynamics, inventiones mathematicae, 145, (2001), 557-595
2) M. Griesemer, Exponential Decay and Ionization Thresholds in Non-Relativistic Quantum Electrodynamics, Journ. Func. Ana. 210,2, (2004)

For self-adjointness for arbitrary coupling constant

1) F. Hiroshima, Self-Adjointness of the Pauli-Fierz Hamiltonian for Arbitrary Values of Coupling Constants, Ann. Henri Poincaré 3 (2002) 171-201.
2) B. Güneysu, O. Matte, J.S. Moller, Stochastic differential equations for models of non-relativistic matter interacting with quantized radiation fields, Probab. Theory Relat. (2017) 167:817-915.

The second one proves many more things, but I also think that the proof for abitrary coupling constant is interesting.

For the spectrum

V. Georgescu, C. Gérard, J.S. Moller, Spectral Theory of Massless Pauli-Fierz Models, Commun. Math. Phys, 249, 29-78 (2004).