In this talk, we will present some recent results on the existence and multiplicity of normalized solutions for the following nonlinear Schrodinger equation

$$(P)^{\mu}_{\alpha,\zeta,\gamma} \qquad \begin{cases} -\Delta u = \lambda u + f(u) & \text{in } \Omega, \\ \mathcal{B}_{\alpha,\zeta,\gamma} u = 0 & \text{on } \partial\Omega, \\ \int_{\Omega} u^2 \, dx = \mu, \end{cases}$$

where $\Omega \subset \mathbb{R}^N$ $(N \geq 1)$ is a smooth bounded domain, $\mu > 0$ is prescribed, $\lambda \in \mathbb{R}$ is a part of the unknown which appears as a Lagrange multiplier, the boundary operator $\mathcal{B}_{\alpha,\zeta,\gamma}$ is defined by

$$\mathcal{B}_{\alpha,\zeta,\gamma} u = \alpha u + \zeta \frac{\partial u}{\partial \eta} - \gamma g(u),$$

where $\alpha, \zeta, \gamma \in \{0, 1\}$ and η denotes the outward unit normal on $\partial\Omega$, $f, g : \mathbb{R} \to \mathbb{R}$ are continuous functions satisfying some technical conditions. Moreover, we highlight several further applications of our approach, including the nonlinear Schrodinger equations with critical exponential growth in $\mathbb{R}^2$, the nonlinear Schrodinger equations with magnetic fields, the biharmonic equations, and the Choquard equations. This work is a joint work with Claudianor O. Alves (Brazil) and Zhentao He (China).