New **Undulator** Vessels. **Development** in N. ROUVIERE, IPN, Orsay - The ESRF is a 6 GeV 200 mA Synchrotron Radiation Source which produces X ray beams with increasing brilliance from the undulators. The undulator gaps are now reduced to 11 mm thus requesting vessels with a maximum height of 10 mm. This new generation of vessels has a 8 mm vertical beam stay clear dimension and a length of 5 meters. They are devoid of any distributed pump, only one 120 l/s pump is installed at each extremity of the vessel. When these vessels receive the electron beam for the first time they reach a normalised pressure of 5×10^{-9} mbar/mA measured at both ends. The technology of these vessels and their preparation in the laboratory minimise partial pressures of CO and CO2. After beam conditioning the normalised pressure decrease to 2×10^{-11} mbar/mA. The fabrication and preparation of these vessels are described in this paper.