Organic Chemistry 211 Laboratory
Identification of the Unknowns
(Melting Point Measurement)

Objective: The unknowns from the part 2 of the extraction experiment will be identified via the measurements of their melting points.

Note: The table below, summarizes the possible unknowns:

Table 3.1 Compounds for Melting-Point Unknowns

Compound	MP (^{o}C)	Compound	MP (^{o}C)
Benzhydrol	68	*o*-Anisic acid	100
Phenyl benzoate	69	Phenanthrene	101
Biphenyl	70	Fluorene	114
Phenylacetic acid	78	trans-Cinnamic acid	133
Naphthalene	80	Benzoic acid	122
Benzil	95	Vanillin	81
p-tuloic acid	179-180	o-tuloic acid	104-105

For Your Report:

Present the identities of your unknowns in the results section.
Draw a comparison between the experimentally determined and the value obtained from the literature. Also calculate the % error for your measurement.

Procedure:
Fill capillary tube with approximately 5 mm of sample and drop tube through long glass tubing to compact the sample. Insert capillary tube into the Mel-Temp apparatus. Apply heat at a rate that will rise 10-20 degrees per minute watching for any sign of melting or "sweating". Record temperature when melting first occurs and when sample has completely melted. Repeat procedure to confirm. Heat rapidly to approximately 15 degrees below measured melting point and then slow to 1-2 degrees per minute. Record beginning and ending of melting point.